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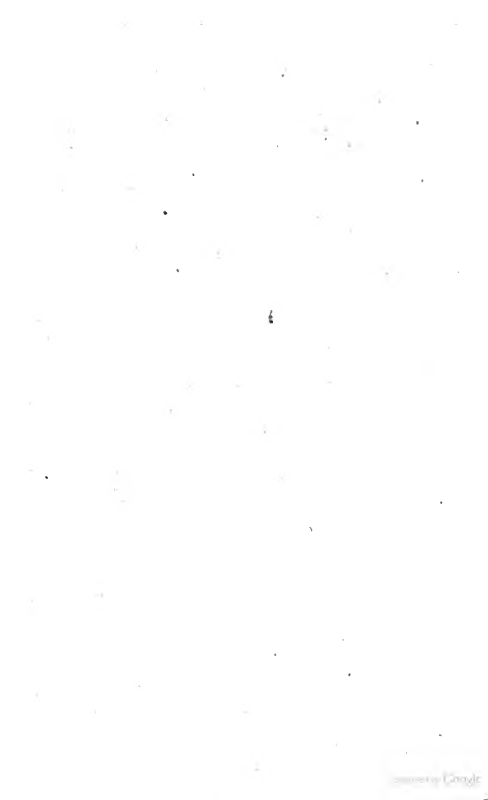
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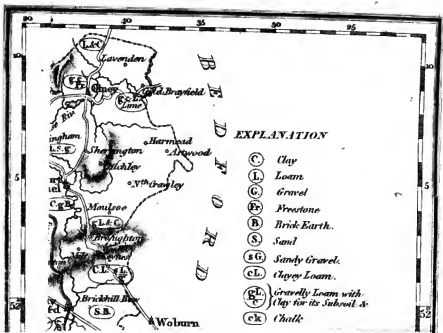
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GENERAL VIEW
OF THE
AGRICULTURE
OF
BUCKINGHAMSHIRE.

DRAWN UP FOR
THE BOARD OF AGRICULTURE
AND INTERNAL IMPROVEMENT.

BY
THE REV. ST. JOHN PRIEST,
SECRETARY TO THE NORFOLK AGRICULTURAL SOCIETY.

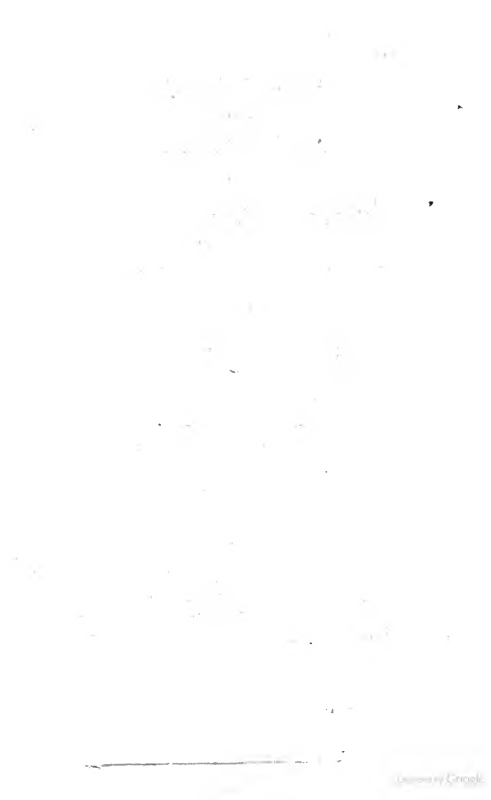
WITH AN APPENDIX,
CONTAINING
EXTRACTS FROM A SURVEY OF THE SAME COUNTY,
DELIVERED TO THE BOARD BY MR. PARKINSON.

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ADVERTISEMENT.

THE desire that has been generally expressed, to have the AGRICULTURAL SURVEYS of the KINGDOM reprinted, with the additional Communications which have been received since the ORIGINAL REPORTS were circulated, has induced the BOARD OF AGRICULTURE to come to a resolution to reprint such as appear on the whole fit for publication.

It is proper at the same time to add, that the Board does not consider itself responsible for every statement contained in the Reports thus reprinted, and that it will thankfully acknowledge any additional information which may still be communicated.

N. B. *Letters to the Board, may be addressed to Sir JOHN SINCLAIR, Bart. M. P. the President, No. 32, Sackville-Street, Piccadilly, London.*



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ERRATUM.

Page 48, Chap. IV. for "STATE OF PROPERTY," read, "MODE OF OCCUPATION."

originally formed with reference to the jurisdiction of particular persons, to whom such lands were entrusted, will in the present day produce astonishment in the mind of the agriculturist upon the first glance of his survey, because he will find those boundaries crossing soils of the same nature, and enclosing practices of culture widely different from each other, and but in few instances will the limits of counties be the limits of soil or practice. They vary like the lines which mark the boundaries of different fields upon a farm, and like them, were originally formed by whim, caprice, or accident. Not a county in England is more whimsical in its shape than Buckinghamshire: it is oblong, but with indentations and projections unaccountable. It is bounded on its northern parts by Northamptonshire, and from Westbury and Brackley, the most north-westerly points, to Northway-house and Snelson, the most north-easterly (a distance of twenty-four miles), the line of boundary lies between $52^{\circ} 1'$ and $52^{\circ} 11' 30''$. On the east, Bucks is bounded by Bedfordshire twenty-four miles from Snelson to Three Shire Hole, and from thence to Staines, eleven miles, by Middlesex. It is impossible to account for the irregularity of this boundary. Although from a point about half a mile from Three Shire Hole, it is not more than a quarter of a mile cross Hertfordshire to a point upon the boundary near to Little Gaddesden; yet if we follow the county line, which joins those points, we shall find it nearly six miles. So again, from a point at Nettleden, upon the boundary towards the north of Birkhamstead, to the nearest point upon the boundary towards the south of Birkhamstead, a straight line, will not exceed two miles; but if we trace the course of the boundary from the former of these points to the latter, through all its windings,

windings, we shall find not less than twenty-five miles, without any apparent cause for such irregularity. On the south, Bucks is bounded by Berkshire, having the river Thames for the boundary from Staines by Windsor, and Marlow to Henley, about eighteen miles in a straight line, but by the course of the river about twenty-five miles. On the west, from Henley to Brackley, Bucks is bounded by Oxfordshire.

Throughout the whole of this boundary, except on the south, rivers or streams have but a small share in the delineation: the line is marked by woods, trees, fences, stones, and lanes, in the same manner as parishes are bounded one from another.

Bucks is situated between the latitudes of $51^{\circ} 25'$ and $52^{\circ} 11'$ north, and between the longitudes of 30° and $1^{\circ} 9'$ west from Greenwich.

By a method of calculation first shewn by the Bishop of Llandaff, the number of statute acres, according to Cary's Map, published in January, 1804, and taken from an actual survey, is 396,013. It is however so difficult to weigh accurately a small part containing not more than sixty-four square miles, that I resolved to measure the Map as correctly as possible, in the following manner:

I took an exact copy of Cary's Map upon paper, by tracing its outline, after the Map was strained upon a canvass blind at a window. This copy was cut out with great exactness by a sharp-pointed knife, and then divided into pieces, which were so neatly laid together, as to form a right-angled parallelogram, thus: another piece of paper was cut into the form of an *assumed* parallelogram longer than necessary, upon which the pieces of the copy were laid, and cemented by gum-water, so as to fill all parts of a right-angled parallelo-

gram shorter than that assumed; the difference between the assumed parallelogram and that formed by the pieces of the copy of the Map, was accurately measured and subtracted from the assumed parallelogram, and the remainder gave 391,040 acres, the measure of the number of acres in Bucks.

Thus then we have the number of acres taken from Cary's Map,

By weight, 396,013

By measure, 391,040

From which, if we take an average, we shall probably state it as accurately as it can be found to be, 393,526 statute acres, which, for the sake of round numbers, we will call 393,600 statute acres.

SECT. II.—DIVISIONS.

THERE is nothing worthy of particular remark as to the political and ecclesiastical divisions of Bucks. It is divided into eight hundreds, viz. 1. Buckingham, 2. Newport, 3. Cotslow, 4. Ashendon, 5. Aylesbury, 6. Disborough, 7. Burnham, and 8. Stoke. It contains 205 parishes, of which fifteen are market towns, viz. Aylesbury, and Buckingham, the county towns; Marlow, Wendover, Wycombe, Amersham, Beaconsfield, Chesham, Colnebrook, Ivinghoe, Newport Pagnell, Olney, Risborough, Stony Stratford, and Winslow, of which the first six are boroughs, and, with the county, send fourteen members to Parliament. Bucks is included in the northern circuit, and lies in the province of Canterbury and the diocese of Lincoln, and has its own archdeacon.

In

In an agricultural view, Bucks may be divided into three parts—1st, Into arable farms; 2dly, Into dairy farms; and 3dly, Into farms of a mixed nature, partly arable and partly grazing.

The arable farms are disposed throughout all the flinty and turnip lands upon those chalky hills of Bucks which form a part of the Chiltern-hills, and from them to the river Thames on the south, together with the sandy lands in the Brick-hills, Soulbury, and Linslade, and some parts of the Vale of Aylesbury. These farms contain but a small proportion of pasturage. The dairy farms, or farms of pasturage, contain but little arable land, and comprise most of the interior part of Bucks (except some parts of the Vale of Aylesbury), from the Chiltern-hills, which cross the county from east to west, until we come to Watling-street, from whence to the extremity of the county, are farms generally of a mixed nature.

In this view of Bucks, we compute that one-half of the county consists of arable farms, of which the proportion of the ploughed land to the pasture is as five to one; one-third consists of dairy farms, of which the proportion is as one to sixteen; and one-sixth consists of farms of a mixed nature, having the proportion of arable to pasture as five to three.

If we suppose the woods to be computed at 20,000 acres, the waste lands at 8000 acres, and the water at 500 acres, we shall have the number of acres remaining, 365,100: but from these we must deduct for roads and towns, one-tenth; whence we find in the whole county only 328,590 acres of arable and pasture land.

ed, that observations upon the heat and rain, by the thermometer, the barometer, and the hyetometer, have not been made, or if made, that they have not been preserved and published; for surely from a collection of facts of this nature, correctly ascertained, combined with the chemical analysis of the soils upon which such facts occur, some addition might be expected to be made to the progress of the science of vegetation, by forming comparisons of the effect of practices in different places, and from thence drawing conclusions to correct or assist those practices.

It should seem, that some difference of climate does exist here from that of the eastern counties (Norfolk for instance), if I may draw any conclusion from my own observations in the course of a year; for on Thursday, the 14th of January (1808), a most violent wind, in Norfolk, took off the roofs from a great many houses, and thatches of stacks, and was attended by a deep fall of snow, whilst at Aylesbury, in this county, only a smart shower of hail and rain was experienced for an hour in the middle of the day, and at night a very sharp frost without any snow; but in the county of Norfolk many roads were rendered impassable, and much snow remained upon the ground for more than a fortnight after it.

To confirm the opinion already advanced, I may also state, that during my residence in Bucks, from the 12th of September (1808) to the 1st of October, scarce a day passed with rain, but the farmers were enabled to put in their wheat well; whilst in the county of Norfolk scarce a day passed without rain, insomuch that much barley, which could not be got in since the harvest, was with difficulty made ready for stacking, and rendered totally unfit for malting.

The Rev. Mr. Cautley, of Moulsoe, and Mr. Hardy,

of Newport Pagnel, gave such an account of a storm of hail, which fell between six and seven o'clock of the 19th of August, in the year 1800, as seems to render meteorological accounts very desirable. The stones were, generally speaking, from three to four inches in diameter; the tiles of several houses were broken by them, and the crops of wheat, barley and beans, destroyed, from Stony Stratford, west, to Shefford, east; and from Newport Pagnel, north, to Woburn, in Bedfordshire, south. The farmers did not attempt to thrash their barley, and the beans were thrashed in the field by the storm. At Ampthill, in Bedfordshire, Lord Ossory's estate sustained more than 300*l.* damage.

Having mentioned a hyetometer, and the necessity of measuring the quantity of rain which falls in a given place, it may not be improper to describe the apparatus, and the method of using it. The etymology of the word will be evident to a Greek scholar, but for the sake of others, must be explained to be from (ὕψος, *pluvia*, which signifies) *rain* and (μέτρον, *metrum*) *measure*. It is therefore properly an apparatus for measuring the quantity of rain which falls in a given time at any given place, and may by one compound English word be called a *rain-gauge*.

A hyetometer consists of three parts—1. A receiver (see *Fig. 1*), which may be a large earthen pot;—2. A tin tunnel (*Fig. 2*), whose top is a perfect square of

Fig. 1.



Fig. 2.



twelve inches, and therefore its superficial contents will be 144 inches: the depth of the tunnel may be six inches deeper perhaps than is necessary for rain, but not for snow; its shaft, which is to be fitted to the mouth of the receiver, and inserted into it, must be of the same form, circular, and may be of any length, so as to give steadiness to the apparatus; for instance, six or eight inches, or more;—and 3. A gauge (see *Fig. 3*),

Fig. 3.



which is a tube of tin, made so as to be dipped into the receiver, or to have the water of the receiver poured into it, and to contain a proportional part of one inch depth of the superficial contents of the tunnel. Hence the gauge being a parallelepipedon, may be of the following dimensions: let its base be one inch and a half square, and its length four inches; then will it contain $1\frac{1}{2} \times 1\frac{1}{2} \times 4 = 9$ cubic inches, or $\frac{1}{16}$ of 144 inches, that is, $\frac{1}{16}$ of one inch depth of the tunnel; and therefore the gauge filled sixteen times, will measure one inch depth of rain. If the base of the gauge be one inch square, its length may be three, four, six, or twelve inches, as is most convenient: if it be three inches it will contain three cubic inches, or $\frac{1}{48}$ of 144 inches, that is, $\frac{1}{48}$ of one inch depth of the tunnel, and therefore must be filled 48 times, to measure one inch depth of rain: if the gauge is four inches long, it must be filled 36 times, because $4 \times 36 = 144$: if it is six inches long, it must be

be filled 24 times, because $6 \times 24 = 144$; and if it is 12 inches long, it must be filled only 12 times, because $12 \times 12 = 144$. In general, the solid contents of one inch depth upon the mouth of the tunnel, must be a multiple of the solid contents of the gauge; I say *one inch depth*, because that is the standard* by which the

* QUANTITY OF RAIN

WHICH FELL AT THE FOLLOWING PLACES IN THE YEAR 1806.

In Inches and Decimals.

	Chichester.	Sandgate, near Chert- sey, Surrey.	London.	Dorset, Nor- folk.	Chas- worth, Der- byshire.	Lincoln.	Horncastle, Lincolnsh.	North- ham.	Ferryby, Kingston- upon-Hull.	Lancaster.	Dalton, Lancashire.	Kendal.	Victory of Edinburgh.
In January	—	2.85	2.66	2.37	3.96	—	3.49	2.80	3.74	5.75	5.40	7.90	2.66
February	—	1.12	0.86	1.28	2.57	—	1.35	1.10	2.33	3.94	4.02	5.14	1.08
March	—	2.9	2.22	1.94	2.05	—	2.25	1.74	3.51	0.87	1.43	1.92	0.48
April	—	0.82	0.72	1.75	0.73	—	1.80	0.88	0.89	1.06	0.74	0.56	0.74
May	—	0.82	1.44	0.35	1.52	1.40	0.80	1.50	1.38	0.00	2.58	2.12	2.23
June	—	0.82	0.64	0.76	2.5	1.71	1.40	1.95	1.50	0.69	1.45	1.43	0.20
July	—	3.92	5.56	2.57	2.53	1.32	3.37	3.24	3.52	3.06	4.38	4.63	2.74
August	2.57	1.55	2.60	3.40	2.49	1.67	2.10	2.55	2.78	5.37	7.15	7.18	2.65
September	2.47	2.94	2.72	4.62	1.78	2.58	1.86	1.70	2.49	3.63	3.94	4.85	0.98
October	3.07	1.28	1.02	1.48	1.53	1.34	2.40	1.10	1.22	1.51	3.08	1.99	1.92
November	4.80	4.44	3.64	2.49	4.05	3.51	3.50	2.75	4.31	8.94	8.37	9.32	4.47
December	6.20	4.01	3.76	2.50	4.90	3.11	2.73	4.25	3.20	5.89	7.27	7.43	1.71
	22.78	25.96	27.84	25.51	30.08	18.13	26.65	25.56	30.87	40.71	49.81	59.89	21.86

N. B. No account received of the fall of rain at Chichester for the first six, nor at Lincoln for the three first months.

quantity

quantity of rain is measured which falls in different parts of the world. Different dimensions might be given, both for the tunnel and for the gauge, but it is presumed the above are sufficient for the purpose required.

The method of using the hyetometer is, to place the receiver in some convenient open spot, in which there is reason to suppose as much rain falls as does in general in the neighbourhood, and not more : let the tunnel be fixed into the mouth of the receiver, so that they may stand perfectly steady and level ; then with the gauge, measure the rain in the receiver as often as is necessary, taking care to note the quantity from a fixed hour and day in the year, to the same hour and day in the next year. There will be some trouble in the winter, and great care will be necessary to collect the water from the snow, so as to retain the whole of it.

Accounts should be taken at different places, and an average deduced from them. It may be presumed that the accounts will vary very much, if taken upon the flat rich loams near Eton, upon the Thames, from those taken upon the Chiltern-hills, from Wendover to Princes Risborough, where much chalk abounds, and from those taken in the district where the storm of hail did so much damage in the year 1800.

SECT. IV.—SOIL.

SOIL is that substance which serves the purposes of vegetation, in which sense it is used by Swift, where he says, “ The first cause of a kingdom’s thriving is the fruitfulness of the soil to produce the necessaries and
conve-

conveniences of life." There is nothing within the contemplation of man which admits of greater variety than soil, because the proportions of its component parts may be infinite, as well as the parts themselves. Thus in the rainbow the primary colours are seven, viz. red, orange, yellow, green, blue, indigo, and violet; but it is evident to an observer, that although each of these is distinct from another, yet it is so difficult to point out where one colour ends and another begins, that there might as well be enumerated an infinite number between each. So is it in those substances which compose soil; they are earths, salts, minerals, waters, airs, light and heat, which although perfectly distinct one from another, admit of such variety each in its own nature, and of combinations so various with one another, that the number of component parts of a soil is altogether infinite. In common practice, however, and for the common purposes of agriculture, it will be necessary to consider only four primary kinds of soil, viz. clay, chalk, sand, and gravel, and to call a combination of these, serviceable for the purposes of vegetation, a loam, and as any of the primary earths predominates in that combination, to form from thence an epithet to that loam. Thus in land moderately adhesive, and not so friable as chalk, it will be necessary to denote the soil by the term, a clayey loam, that is, a mixture of the earths, in which clay predominates; and in the same manner we shall gain the terms, chalky loam, sandy loam, and gravelly loam. There are also other soils, which cannot be classed amongst the preceding, but which will be evident from the terms by which they are expressed. These are, rich vegetable mould, peat, and marl, which last is a mixture of vegetable mould and clay having chalk stones.

Having

Having thus explained the terms by which different soils are denominated, we may remark, that the subsoils, that is, those earths which lie immediately under the soil, are no less the object of inquiry with the agriculturist, and may in general be expressed by the terms already given, to which may be added, minerals, umber, gypsum, ochre, freestone, and rocks. These subsoils are the principal causes of fertility or sterility in the land where they abound, and give rise to the vulgar terms by which sterile lands are denominated *sour*, *cold*, &c. If a subsoil be a very stiff clay, and retain moisture a long time, the vegetables growing above it are poisoned by it: water in this stagnant state, it is supposed, becomes *acid*, like beer or fermented liquors; a vulgar notion not to be supported by facts, but so predominant as to have produced the term *sour* soil, and made an apology for the want of proper husbandry, viz. draining of many an acre of land in every county, as well as that of Bucks. It is not however our province in this Section to correct errors, but only to explain vulgar terms, in order to express facts as clearly as we can. Premising thus much, let us begin at the northern part of the county, and in as regular a manner as we can, trace to the south of it all the soils generally; for as to particulars, there is scarce a single parish where the soil can be characterized by one species of earth, or any one of the terms we have explained: even the Brick-hills, from a point between Wavendon up to Leighton, including Stock-grove, Linslade, and a part of Soulbury, of which the species of soil is more clearly defined than it can be in any other instance in the county; yet here it is not so uniform as not to require great caution in the description. We say, this soil is a sand, poor in some parts, and in others

others so good as to be called a sandy loam: but this sand has veins of gravel, chalky gravel, brick-earth, and some clay. Of clay, however, there is but little; but it is to be observed, that no earth discovers itself so readily as clay. In the Tottenhoe Stone, for instance, in which it is very perceptible, there are but four parts and a half in one hundred, according to the analysis of it made by Edward Hanmer, Esq. of Stock-grove, who found it to consist of,

	<i>Weight.</i>
Calcareous earth,	78.5 parts.
Silex,	17
Argillaceous,	4.5
	<hr/> 100 parts. <hr/>

This stone is so soft, that it may be scraped with a sharp knife, and the edge of the knife not be blunted. It is also so brittle, or rather, so easily broken into the laminæ, of which it is formed, that in building, it is necessary to place those parts of the stone uppermost which lie so in the quarry, as was the case at Tyringham, in this county, in Mr. Praed's house, and at Halton, in the church built by Sir John Dashwood King, and is the case in a most splendid Gothic mansion now building by the Right Honourable the Earl of Bridgewater, at Ashbridge.

On the north of the county, at Cold Brayfield, we find a rich loam in the meadows, and as we ascend, gravel, clay, and limestone. In the neighbourhood of Olney, Tyringham, and Castle Thorpe, are various clays and loams, with mixtures of gravel: at Stoke Goldington, not far from Newport, the soil is generally a deep clay. There are also quarries of freestone, in
which

which instances the soil is thin. At Newport are loam, clay, gravel, and brick-earth; and at Moulsoe we find gravelly loam and clay, with brick-earth. The whole of this district on the north of Watling-street, is good turnip land; and the meadows are rich along the Ouse, particularly at Tyingham and Filgrave, the property of William Praed, Esq.: at these places there is also rock and a sandy gravel. On the west of Watling-street, at Thornton, the soil is a loam, with some clay; the subsoil is a grey limestone, so hard, that the expense of breaking it into pieces for burning, is double that of digging it: here are also some veins of gravel and sand. From hence towards Buckingham, on the north of the Ouse, are various soils: on one side of Buckingham, the soil is a gravelly loam, with chalk-stone, brick-earth, and veins of sand; on the other side a clayey loam, with brick-earth and limestone. At Westbury is much clay and chalk; at Turwerton is clay and brick-earth; and at Biddlesden a deep clay with very rich pastures; so rich, that there appeared a kind of jealousy on the part of the proprietor lest too much should be known of them. At Stowe, the seat of the Marquis of Buckingham, the soil is part clay and part gravel.

The middle of Bucks, from the Ouse, on the north, and Watling-street, on the north-east, till we come to the Chiltern-hills, are various clays, with chalk under them, upon most of the hills.

At Hillesden, the estate of T. W. Coke, Esq. there is clay and gravel; at Cowley, a sandy loam and gravel, with some good turnip land. Between this estate and Padbury, which lies in the road from Buckingham to Aylesbury, is gravel with clay. At Winslow, clay
and

and brick-earth with chalk; from hence towards Kreslow, deep stiff clays. At Whitchurch, the vallies contain rich loams; the hills clayey loams upon chalk and brick-earth. Upon the right of this road, the Claydons consist of clays; at Twyford is some gravel. To the left of this road lie Whaddon Chace, Drayton, Stewkley, Wing: at the first of these places is a gravelly loam with clay under it; there are also veins of sand and of gravel; but there is much calcareous earth. At Drayton are clays and chalks; at Stewkley clayey loams with all sorts of subsoils, viz. gravel, sand, limestone, brick-earth, and marl; and at Wing, the soil is a gravelly loam, with veins of clay, sand, and gravel: there is also a marl, which Mr. Haumer, of Stockgrove, has analyzed, and found to consist of,

	<i>Weight.</i>
Calcareous earth,	43.2
Argillaceous,	30.7
Siliceous,	26.1
	<hr/>
	100
	<hr/>

From Aylesbury, towards the west, runs the river Thames, which passes through and enriches as it goes the meadows on each side: the whole of the district on the north of this river, comprehending Berryfield, the Winchendons, Waddesdon, and Wooton (the seat of Lord Temple), Dorton, Chilton, Brill, and Boarstall (the estate of Sir John Aubrey, Bart.), contains many rich clays and loams, producing pastures as excellent as any in the interior parts of the kingdom. But to this general view there will be some particular exceptions; for at Upper Winchendon we find some shallow
soils

soils upon a subsoil which is a chalk, but called ragstone; and at Long Crendon, are various soils, clayey loams, then clays upon chalk, then strong rocky land with veins of sand, and then much sand with veins of gravel. On the south of the river Thame, from Scotch Grove, a westerly point, to Buckland, including all the district from the river to the Chiltern-hills, are various loams, with veins of sand, gravel, and chalk: on the east at Bearton, Buckland, and Aston Clinton, these loams abound with more clay. At Halton, a seat of Sir John Dashwood King, Bart. the soil of the lands which lie in the district now under consideration, is a clayey loam with chalky gravel for its subsoil.

We are now leaving the Vale of Aylesbury, called so, it may be presumed, in contradistinction to the hills to which we are now coming, called the Chilterns, which running across the country from east to west, after having passed from Cambridgeshire, on the border of Hertfordshire, and by Dunstable in Bedfordshire, enter Bucks near Eddlesborough, and thus pass by Halton, Wendover, Ellesborough, and Risborough, and leave Bucks near Bledlow, on the west. Upon the side of these hills in some parts, and at their foot in others, lies the Ikenild* Way, which runs through the county; and which would not be noticed in this place, did not a remarkable circumstance attend it in its progress, perhaps accidentally, which is, that on the right hand side of it, towards the valley, the soil is so good a mixture of clay and chalk, as to be worth for a furlong in breadth, according to the estimation of farmers situated near it, at least 10*s.* an acre to hire, more than that on the left hand, between it and

* This word *Ikenild* is supposed to be a corruption of *Icen side*, to which add *way*, and we have the *old way* of the *Iceni*.

the hills. This circumstance was observed by Sir John Dashwood King, Bart. and his tenants at Hulton, as well as by Mr. Grace, at Risborough. It is not wonderful that the lowest lands should be much richer than lands lying by the side of hills; but it is remarkable that this Roman road should thus separate for a considerable way, lands so distinct from each other in quality. The subsoil of these hills is chalk of different qualities, which is highly congenial to the growth of the beech, a tree which is found in great abundance, and grows very vigorously in all parts. Besides chalk, there are also veins of gravel and sand, and in many parts a great abundance of brick earth, particularly from the neighbourhood of Chesham on the east, to Amersham, near which place this earth is very fine, and supplies a manufactory of pots and pans. The vallies between these hills are rich clays and clayey loams, which upon the sides of the hills are in some places very thin, and form a clayey chalk: upon some of the hills the soil is clayey, and in others so very flinty, that it would be an endless operation for a farmer to gather them, and withal imprudent, if it were possible, on account of the moisture attracted by them.

Upon that part of Bucks which lies towards Ashridge, the seat of the Earl of Bridgewater, we find the soil various, flinty and clayey, upon chalk, with veins of different clays, white and blue: there is also brick earth. These chalks are very proper for the growth of sainfoin, an advantage of which the best farmers avail themselves.

We have but one district remaining, which as to soil differs from all other parts of Bucks; this is the south part, comprehended between Uxbridge, Colubrook, Staines, Windsor, and Maidenhead. This is generally

generally a gravelly loam upon gravel. Near the Thames peat is found.

From Cary's Map, and the foregoing account of the soil of Bucks, we may compute the number of acres of each soil to be,

	<i>Acres.</i>
Of clay and loam,	238,720
Sand,	6400
The Chilterns,	122,880
Gravelly loam,	25,600
	<hr/>
	393,600
	<hr/>

SECT. V.—MINERALS.

THE account of soils given in the last Section, precludes the necessity of mentioning minerals in a distinct Section, except for the sake of following the plan prescribed by the Board, because no other minerals are found in this county to any amount, except those already pointed out. At Brill there is some ochre, which is used for painting; and which, after a tedious and expensive process, is worth from 8s. to 10s. per cwt.; umber is also found in small quantities; and near Newport there is a quarry of good marble, from whence Mr. Ward of that town has chimney-pieces, one in his kitchen, and another in an entrance room. This quarry, however, lies too deep for working, or for any advantage to be derived from it. Near Olney also is a quarry of freestone, which is bought for building at 2s. a cart load; of which two cart loads will build three yards of wall 24 inches thick.

SECT. VI.—WATER.

THIS county is watered on the north by the river Ouse, which enters near Westbury, and passing by Buckingham, where it supplies a cut from the Grand Junction Canal with water, leaving Stony Stratford, divides itself near Wolverton into two courses, one of which goes along the boundary parting Bucks from Northamptonshire for five or six miles, and receives the name of the Tow, and so enters Northamptonshire, and the other continues its course by Newport, and then between Gayhurst and Tyringham, by Weston Underwood and Olney,

—————slow winding through a level plain
Of spacious meads, with cattle sprinkled o'er,
Conducts the eye along his sinuous course
Delighted.—————

COWPER.

And then passes into Bedfordshire, at the north-west part of that county, being for about three miles of its course the boundary between the two counties. On the east, near Eddlesborough, rises a stream, which for six or seven miles parts Bedfordshire from Bucks, until it comes to Linslade, from whence it runs past the Brick-hills on the right, and Fenny Stratford on the left, and joins the Ouse at Newport. Into these streams already mentioned, flow several brooks, which take their rise from Whaddon-chace, the highest point in this part of the county. From the hills at Claydon and Edgcott flow streams, some of which run northerly and fall into the Ouse, and others southerly to the river Thame. This river takes its rise from the neighbourhood

hood of Wingrave and Hulcott, in the eastern part of Bucks, and passes near Aylesbury, by Eythorpe (formerly a seat of the Earl of Chesterfield, between Cuddington and Chersley) to Thame, in Oxfordshire, from which place it receives its name: in Oxfordshire it joins the Isis*, and after passing Henley, becomes from thence to Staines the boundary between Berkshire and Bucks. From Chesham runs a stream by Latimers on the left, a seat of Lord George Cavendish, and Cheynies on the right, an ancient seat of the family of his Grace the Duke of Bedford, and after parting Hertfordshire from Bucks for two or three miles, leaves the latter county. The Misbourne stream rises near Hampden, and flowing by Missenden, Amersham, and Chalfont, joins the Coln, which from Wheyberd farm to Uxbridge, about four miles, is the boundary between Middlesex and Bucks: it then leaves the boundary until it comes to Colnbrook, where for about half a mile it is the boundary between the same counties, and from thence runs nearly parallel to the boundary of these counties, and so enters the Thames. Another stream from Wycombe runs through Woburn into the Thame near Hedsor. Indeed so numerous are the streams which take their rise from the Chiltern-hills, and run north and south, that agriculture receives no check for want of water, nor moreover for want of proper falls for that water, inasmuch as the county is well diversified with hills and vales—with hills unpropitious neither to the plough nor to stock, and with vales capable of yielding whatever produce art and good management can effect. If there is any want of water, it

* Whether this name be erroneous or not, must be left to others to consider. See the *Encyclopædia Britannica*, under the word *Thames*.

is upon some parts of the Chiltern-hills, where a sufficient supply might be procured at an easy rate and in a manner very evident, viz. by small reservoirs dug in convenient spots, and having at their bottom clay well trodden and beaten down.

As to water to answer the purposes of markets, no county at the same distance from London is so well supplied. On the south from Henley by Marlow, Maidenhead, Windsor, and Staines, runs the Thame, navigable to London, the freightage upon which for barley does not exceed 2s. per quarter. On the east runs the Grand Junction Canal, into which are branches from Wendover, five miles from Aylesbury (the middle town in the county) and also from Buckingham, so that all parts are within a few miles of a navigation to the metropolis, and many not far from one, which in its northern direction communicates with the seas on the east and west of England, by the Humber on the one part, and the Mersey on the other; for the Grand Junction Canal, in its southern direction, runs into the Thame at Brentford and Paddington, and in its northern communicates first in a direct line with Nottingham, then north-east by Newark and Gainsborough, with the Humber, and so runs into the North Sea or German Ocean; and in its next branch by Coventry, Birmingham, Shrewsbury, and Chester, with the river Mersey, and thus with the Irish Sea. These are advantages one would suppose invaluable. How much would farmers in the middle of some counties (Norfolk for instance) rejoice at such an advantage, who have in many cases to carry corn more than twenty miles to market by land, and to fetch coals the same distance; and who have no other resource for manure but that which their own good management in farming produces.

duces. How much would every acre of land in such a county be increased in value by such a navigation !

In a survey of the streams and rivers in Bucks, with reference to its agriculture, it is impossible not to observe, that these streams, which would add so much to the service of agriculture by draining the land, are suffered to be filled with silt, rubbish, and all sorts of aquatic plants, and are by no means in such a state as to allow a sufficient passage for the water, which frequently runs down from the hills very rapidly ; the consequence is, that along the Ouse and the Thame inundations take place at times, when much injury is done to the herbage and crops of hay. This is an evil which calls for a remedy, and that of a public nature. Some gentlemen, to whom this circumstance has been mentioned, have suggested, that there are no means of correcting this evil but by the appointment of Commissioners of Sewers : such an appointment should originate with those who feel the effects of the evil, and no doubt if proper steps were taken to shew the necessity of the case, such an appointment would take place. It is hoped a Surveyor of a county does his duty by noticing it.

CHAP. II.

STATE OF PROPERTY.

IT is no easy task to get at the truth upon this subject—the state of property. Partial accounts may be had, and a general view of the state of farms, both with respect to their size and their management; but it is difficult to apportion the quantity and nature of the lands belonging to the different proprietors of this or any county, except by having recourse to documents, which, it is to be presumed, are not to be acquired but by means very different from those with which a work of this kind can be supplied. Such documents are to be found in the possession of clerks to the commissioners of the property tax, and from them alone can truth, in this instance, be derived. For the names of the Proprietors of Estates, see No. II. in the Appendix.

SECT. I.—TENURES.

THE tenures of this county are various, and too much land is under the *worst kind* for improving its agriculture. The freehold estates are the same as in all other counties, and would undoubtedly wear a different appearance, were tenants properly encouraged by leases. The copyhold are, some of inheritance, others for lives. Of the former, many are subject to an arbitrary fine, not exceeding however, in any case, two years' rent: this

this is commonly upon alienation a fine of one year and a half rent, and sometimes less. Others are only subject to a fine certain, or that fixed by custom, and generally about two years' quit-rent, and in some cases a certain sum per acre, perhaps sixpence, with one shilling for a house. In general, in all such cases of copyhold, the lord of the manor is compellable to renew, and cannot take more than two years' improved rent. In the Chapter on the Obstacles to Improvement, these observations will be necessary. There are two other kinds of tenure, by no means uncommon in this county—they are leasehold estates, held upon lives, renewable at the end of any of them; or upon leases for twenty-one years, renewable at the end of seven. I say renewable, but this must be taken with reference to the parties themselves. There is no law or custom to oblige either the lessor or lessee to renew, and therefore but little can be expected to take place as to improvements upon such estates. With respect to leases granted by ecclesiastical bodies, it is required by law, that a certain portion of the reserved rent should be in corn, commuted for, however, by money, according to the best price of corn, when the payments become due. These tenures are not uncommon in Bucks, and have a tendency to prevent enclosures.

The Rev. Mr. Causton, of Turweston, holds lands under leases of this kind for twenty-one years, renewable every seven. The lands are unenclosed, and chiefly arable open fields, subject to customs injurious to agriculture. There are here common pastures, upon which the occupiers of the arable open fields have a right to turn on stock, according to their occupation of (what is called) *yard lands*, or, as they were explained, *yards of land*. By a yard of land, however, no determinate number

number of acres is to be understood, as it varies in different places from 28 to 40 acres. Such lands are found in almost all the open fields, and are said to amount to 91,906* acres. These yard lands are described in old law books by the terms *virgata terra*, which should be translated, "portions of land measured by the *virga*, the whip or *rod*." They are all nearly of the same breadth, viz. between five and six yards. Now, five yards and a half make a *rod*, or *pole*, or (*pertica* corrupted into) perch. A yard land will not be the same in one place as in another, because, although the breadths of these portions are the same, the lengths will vary according to the extent of the field so to be divided.

Yard lands are attended with peculiar rights. At Water Eaton, a yard land consists of 30 acres, and for every yard, the proprietor has a right to turn 24 sheep upon the commons, during the time either agreed upon or limited by custom, or otherwise.

At Whaddon there is much yard land, copyhold with fines certain, with two large common pastures. The right of turning cattle upon these, is, for sheep, from All-hallow-day, called here *Holymas*, to Lady-day; and for neat stock, from the 23d day of May to the 1st of November. Here is also a *chace* (or forest in the possession of a subject), which is divided into 28 copses, of which 21 belong to — Selby, Esq. of Winslow, and seven to New College, Oxford. These copses consist of timbers and underwood. Of Mr. Selby's, occupied by his son, W. Lowndes, Esq. one is cut every year, and from that time it is shut up for nine

* See the Appendix, No. VII. of the General Report on Enclosures, drawn up by order of the Board.

years from all cattle, after which, for the remaining term of years until the next cutting, it is open and common, from May to November, for the great cattle of those who have a right to turn in; and these are any persons residing in the parishes (which are six) in which the chace lies. Busky-leys (a word compounded of *busky*, woody, and *leys*, fields) are somewhat of the same nature, except that they have not been the property of the Crown, as chaces have. These chaces have as many deer as the proprietor of them thinks proper.

There is one open pasture field, called the *Stroud*, consisting of 40 acres, which is divided into portions of land, belonging to different proprietors. This has peculiar rights. It is shut up from the public at Lady-day, and in the middle of June, or when the majority of proprietors think proper, is pastured with 40 cows; and when the corn is carried from the arable lands, then these 40 acres are thrown open to the public, and remain common until the next Lady-day. The rent of these 40 acres is estimated at 16s. per acre.

At Bletchley, including the hamlet of Water Eaton, there are many yard lands, of 30 acres to a yard.

At Sfewkley there are 104 yard lands, of 30 acres each; and here, as in Water Eaton, and in most of the open fields, the tenure is the same, viz. copyhold and leasehold.

CHAP. III.

BUILDINGS.

SECT. I.—HOUSES OF PROPRIETORS.

IT would employ much time to describe minutely and properly the houses of proprietors in this county, not because they are more numerous here than in other counties of the same size, for, in point of fact, the contrary is the case, and the consequence is a depreciation in the value of land; but because the residence of the Marquis of Buckingham at Stowe, would itself require as many pages for an accurate account of it, as all the other residences of country gentlemen put together. Descriptions of this splendid and magnificent house and gardens are published, and therefore a particular account of them in this work is superseded.

Next to Stowe, must be mentioned an elegant modern mansion, built not long since at Tyringham, by the architect Mr. J. Soane, for Wm. Praed, Esq. It is built of stone taken from the quarry at Tottenhoe, near Dunstable, and the pillars which support it are of the Ionic order. This house stands upon a rich peninsula of the river Ouse, a spot well adapted for grazing. It is said to have cost more than 20,000*l*. It would be unpardonable not to notice the beautiful arch over the river, and visible from the house, designed and built by the same architect, of stone from Weldon, in Northamptonshire. The height of the arch is fifteen feet, and its span sixty-five.

Wycombe.

Wycombe-abbey, the residence of the Right Hon. Lord Carrington, is well known. His Lordship has rebuilt and added to the abbey with much judgment and taste. He has been at great pains and expense to procure herbage for sheep before and round the abbey, and will no doubt be successful in the end, notwithstanding the difficulties arising from situation, the poorness and thinness of soil, and the chalky subsoil.

The Earl of Bridgewater has begun a most splendid Gothic mansion at Ashridge, partly in Bucks and partly in Herts, upon the site of the old monastery; it will be cased with Tottenhoe stone, and when finished, will be a most costly and magnificent edifice.

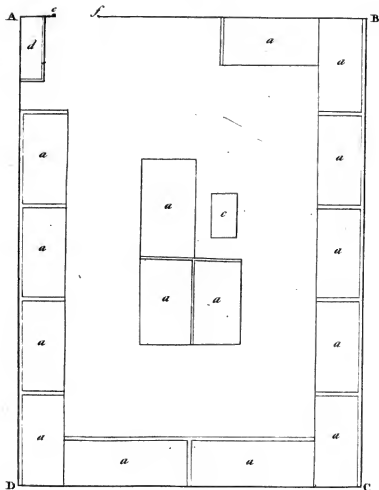
Except those already mentioned, there are no seats of the nobility or of gentlemen, which require notice, with reference to the agriculture of Bucks. No doubt, much advantage would be derived to the public, were there more noted for the good management of land, and exhibiting examples of more perfect systems of husbandry. Gentlemen who make their residence in a county subservient to this point, confer an incalculable obligation upon their country, by setting good examples in practices so essentially necessary to its welfare: upon which occasion I should be doing violence to my own feelings, were I to omit the residences of H. H. Hoare, Esq. of Wavendon, and the Rev. R. Cautley, of Monlsoe; not on account of any particular notice which their dwellings require;—for that of the first gentleman is only a good and proper house for a country gentleman, whilst that of Mr. Cautley is a very good modern parsonage-house;—but on account of the features of agriculture, which are changed upon the property of these gentlemen, around their residences. They have
success-

successfully counteracted and subdued the prejudices of custom and habit ; they have cast off the old fashion of tillage, which consisted in upturning lands, and in forming circuitous routes from one end of a field to the middle of it perhaps, and driving a plough with five, six, and seven horses, by a boy and ploughman ; and they have given the form and appearance of gardens to their farms, by the modern practice of ploughing with two horses and reins, as straight as possible, from one side of a field to the other, and by preparing for the drill, wherever and whenever it suits their judgment to use it. The sight of such property so managed, in the midst of farms where the old relics of the open-field culture are still adored, so ugly to the view of the agriculturist, so disadvantageous to farming, and so detrimental to the public, such a sight delights the eye much more than the most splendid mansions, and is, it may be presumed, much more the object of the present work, unless such mansions tend to promote a progress in the agriculture of the country.

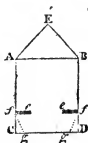
SECT. II.—FARM-HOUSES AND OFFICES.

BESIDES the houses of proprietors, noted for the elegance of their building or the richness of their situation, Bucks is not wanting in new-erected farm-houses, elegant and substantial, though not numerous. The Marquis of Buckingham has lately built one, inhabited by Mr. G. Parrot, at Stowe : the yards are spacious, and the dairy neat, with an improvement under the leads, by the projecting of the wall, which is sloped from the height,

Dairy.



height, at which the leads are rested upon wood inlaid in the side of the walls into the dairy about 18 inches, thus :



If $AEBDC$ be a perpendicular section of the dairy, AB being the ceiling, and AEB the roof, and CD the floor, ef, ef , will represent the leads, and under them are projections of the wall fg, fg into the dairy, so that Cg, Dg are each eighteen inches. By these projections an accumulation of dirt and filth is more easily prevented than when the walls are perpendicular to the floor of the dairy. The dairies in all the farm-houses in Bucks are particularly worthy of notice for their capaciousness, neatness, and cleanliness : they are in general oblong buildings, that is, parallelipipedons. Mr. Parrot's is twenty-five feet long, and eighteen wide, and the height sufficient to make it very airy and to be kept perfectly clean. The floor is of stone ; the leads are each about four feet long and two feet wide, placed along the sides and ends of the room, with two or three in the middle. (*See Plate I.*)

If $ABCD$ represent a section of the dairy by a plane parallel to the horizon, and passing through the leads, a, a, a , &c. will represent the leads, ef , the door, c the cream cistern, into which the cream is poured as it is skimmed every morning and evening from the leads : it is

is let out at the bottom by a brass cock into a large tin flagon, and by it carried to the churns, *d* is a cistern placed *here* in one corner, but *generally* in a place convenient for conveying the skimmed milk by pipes into the hog-tub.

In a room adjoining to the dairy stand the churns, two in number, one large and the other small, sufficient to churn from fourteen to eight dozen pounds of butter. They are turned by a horse, by wheels made in some machines of wood, in others of cast iron. The price is about eighteen guineas.

Fig. 1, Plate II. represents a cast-iron apparatus for churning. *A, B*, are the churns in one room, and *CDEF* is that part of the apparatus in an adjoining room, where the horse is yoked to the lever *EF*, and by the short shafts *bc*, *Fa*, pushes the lever before him.

Fig. 2, is meant to represent another method of making the apparatus; where the cogs of the wheel *K* are horizontal, and are turned by a large wheel *L*, fourteen or fifteen feet in diameter, to which the horse is yoked as in some mills, under the wheel. The wheel *K* is two feet and a half in diameter. *NOP* represents the path of the horse in each figure.

The time of churning varies from an hour and a half to two hours. I stood before a churn, in which there were eight dozen pounds of butter, in the month of November, and accurately examined the number of times in which the churn turned round in a minute, and found it to be 45.

From the dairy we are naturally led to the hog-sty. This, in such a county as Bucks, where so many hogs are fattened for bacon, and from whence so many porkers are sent to the London market, ought to be neat, commodious, and worthy of imitation. No such
sty,

Churns

Plate II p. 52.
Buckingham.

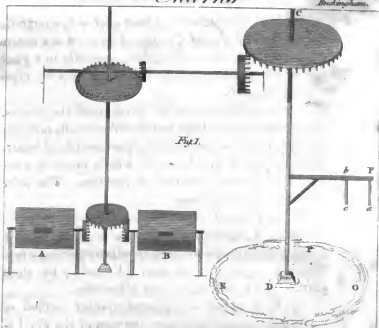


Fig. 1.

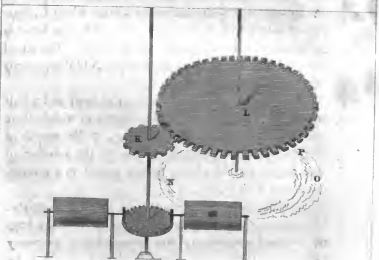


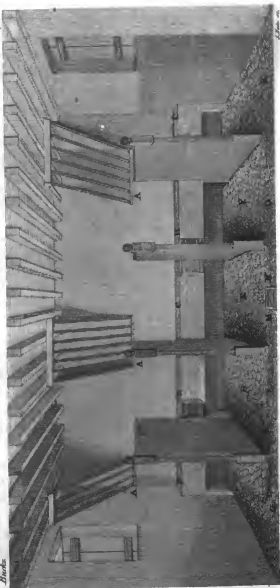
Fig. 2.





Stalls for Cows :-

Plate III, p. 13.



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sty, however, is to be seen. In that of Mr. G. Parrot's, at Stowe, the only thing worthy of notice is the method of keeping the pigs from getting into the troughs, which is by iron grates which cover the troughs. These answer the purpose well, as the pigs can thrust in their snouts only, and by that means are prevented from wasting their food.

The Marquis of Buckingham has at Stowe some well-contrived stalls for cows. Each beast has a stall to herself: a crib runs from one end to the other, in which between two beasts is placed alternately at the stalls a cistern for water, which is filled by a leaden pipe conveyed at the back of the crib. As every two beasts have a cistern for water, so have every two a rack for hay, so placed that the dust or refuse of the hay may not fall into the cistern of water, for which purpose the racks supply those beasts with hay which do not partake with each other in the water. (See *Plate III.*)

C, C, C, is a crib from one end of the cow-house to the other. B, B, are cisterns for water, supplied by a leaden pipe conveyed at the back of the crib C, C, C, and drawn into the cisterns by a brass cock. A, A, A, are racks for hay, elevated four feet from the floor. Thus, as every beast has a stall to herself, the beast in stall E partakes with the beast in stall D of water, and with the beast in stall F of hay, and so on. Whether this method of raising the racks be attended with any real inconvenience, time and experience only can testify; at any rate, the manner of tying up the beast to the crib by the neck is much more sightly, and it may be presumed more safe, than the common practice of fastening their heads between two upright pieces of wood. There are two other circumstances in this cow-

BUCKS.] D house

house belonging to the Marquis, which render it worthy of notice, as being different from the hovels usually seen. In the first place, there is a passage between the crib and the wall of the house, so that the person who feeds the beasts can go and convey food to every beast without interruption to any beast, and with much convenience to himself; and in the next place, behind the beasts is a channel, G L M N O H, by which all the water from the stalls is conveyed to an iron grate M N, and from thence by pipes under the house into a reservoir, in which the drain of the whole of the farm-yard is received, and into which straw is laid;—a practice well worthy every farmer's attention, and particularly necessary to be mentioned to those who seem so blind to the advantage to be gained by such economy, as to suffer the whole drain of their yards either to flow into their neighbour's yard, or to be lost in a stream that runs down to a rivulet, which is the common drain of the neighbourhood.

At Lord Carrington's, at Wycombe, the racks for hay in one of the cow-houses rest immediately behind the manger, without elevation and without interruption. There are the other conveniences which appear in the stalls now described at Stowe; and similar means of preserving the drain of the yard are now carrying into execution. At Fawley-court, the seat of Strickland Freeman, Esq. the stalls are double, the beasts tied by the neck, and the racks for hay rest upon the back of the crib without elevation. The stalls are two yards and a half wide.

Lord Carrington has some good houses new built at Moulsoe, with yards conveniently disposed.

Mr. Harrison has a new built farm-house at Woolverton, in the road from Newport to Stony Stratford.

It

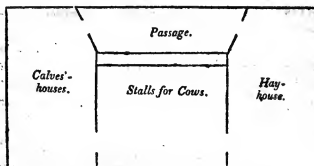
It is well planned for the convenience of the farmer, and not too good for the size of the farm : the annexed ground-plan may give an idea of it. (*See Plate IV.*)

I was unfortunate in not meeting with Mr. Harrison, and therefore could only take the sketch without having the dimensions.

The general disposition of the farm-yards is into two, with a pump and cistern to supply stock with good water. It is not, however, made a general point in the disposition of new built houses, to give the farmer an opportunity of overlooking the business of the farm-yard whilst he is engaged in the house at his breakfast, dinner, or retirement. This is undoubtedly a defect in some of them, and where it exists it is of importance to the farmer, because it gives his servants an opportunity of knowing, that there are times when their master's eye *cannot* be upon them.

Sir John Dashwood King has two buildings at Halton worthy of attention, because they are different from buildings for the same purpose in Bucks. The one is a shed for cattle to shelter themselves, and as it is erected particularly for horses, Sir John has made it with doors opposite to each other, and with stalls, in order, as he observes, to prevent horses from kicking each other. This will strike every one as a matter of moment, who has seen horses, when distressed by flies in the summer, run into a shed having but one door, and no partition in the shed to enable one horse to protect himself against the attacks of another. This shed is boarded on the outside, and railed within with four-inch rails, placed at four inches from each other to the height of four feet, as a lining to the sides of the building, to prevent the cattle from breaking down the outside boards. The other building is a neat house for

cows: it has a hay-house at one end, a calves'-house at the other, and a passage from the former to the latter at the head of the cows, thus:



The barn-floors here, and in most places in Bucks, are protected from the corn by boards raised three feet high on each side of them: there is a convenience in this when the corn is thrashing, and when it is dressing, particularly if it is a different grain from that on the opposite side of the floor.

There are but few exceptions to an unsightly appearance of the offices in the farm-yards, and of the hovels in pastures for cows: they are generally built of wood, and thatched. The annexed Sketch may give an idea of them. (*See Plate V.*)

Some granaries are tiled, and instead of being placed upon blocks of wood, stand upon stone stadles, as do all the stacks of corn. These stadles consist of three parts: at the bottom is a flat stone, upon which is placed a stone, in form the segment (about two-thirds) of a cone, without its vertex, and upon that is a stone as a cap, flat at the bottom and covering the stone under it, so as to prevent mice and rats from climbing into the stack.

A stadle



1. Milking House & round Hayrick.

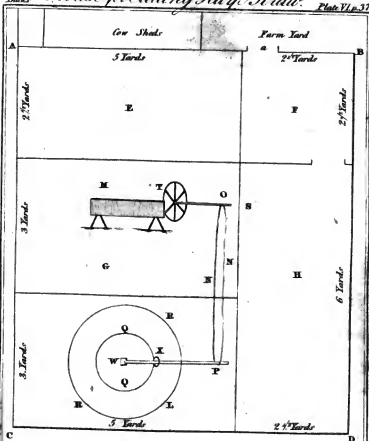


2. Milking House & oval Hayrick.



Granary.





• A. Saddle to support Sticks. &c.

A stable to support stacks, &c.



T. D. T. Drake, Esq. at Shardeloes, near Amersham, has a very convenient and commodious house for cutting hay and straw, at the end of the sheds for feeding cows. It is of the annexed form and dimensions. (*See Plate VI.*)

A, B, C, D, is the house, divided into the partitions E, F, G, H, L. The partition F, having the doors a, a, is for straw, and is two yards and a half square: the partition E is for hay, and is five yards by two and a half; the partition G is elevated about three or four feet, and is three yards square: it contains the chaff-cutter, which is fed by a man standing at M. The chaff-cutter is worked by a strap N N, which goes round a wheel at O, turning the chaff-cutter, and round a wheel at P, which by a spindle P W, communicates with a large wheel Q Q at x. This wheel Q Q is upon the top of a pillar, which moves upon pivots, and is worked by a horse moving under it in the circle R R, in the same manner as in the churn apparatus, *Fig. 2*, p. 32.

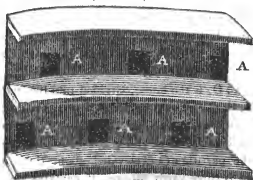
The chaff, as it is cut by the knives upon the wheel at T, falls into the partition H at S, at the height of two feet from the floor. This machine requires only

2 3

one

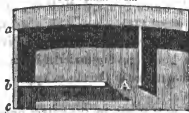
one man to work it. Its price, as Mr. Drake's cow-keeper informed me, was 50*l*.

Mr. Drake has also a pigeon-house worthy of notice. It is a circular building of brick, of about nine yards diameter: the wall is a brick and a half thick. Lockers are formed round the inside walls, in rows one above another, in the following manner, with doors A, A, &c. six inches high and three inches wide, and before the doors and between each row are projections of boards, four inches wide, for the pigeons to light upon.



The lockers are of brick; the following is a section of one, by a plane parallel to the horizon:

The outside Wall.

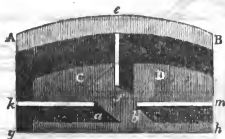


A is a door, b A is brick, a b is nine inches. The distance from door to door is one foot: b c is a projection before

before the lockers for the pigeons to light upon. There are in all 23 rows of lockers from top to bottom.

In the middle of the room is a post from the bottom of the building reaching almost to the cupola, with small beams crossing it, and two ladders against these beams to climb up to the lockers. There is also a floor of wood, at four feet from the bottom of the building, to receive the dung.

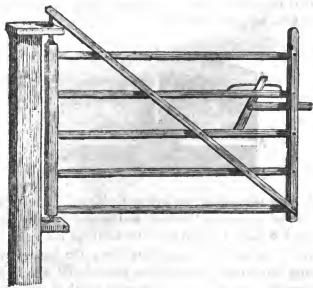
There are one or two observations to be made upon this dove-house. Very properly the lockers are white-washed: this serves in a great measure to keep them free from bugs; but the most effectual preventive of bugs is to build the lockers of clay, as is done in an excellent dove-house built by W. Collison, Esq. at Bilney, near East Dereham, Norfolk. Mr. Drake's lockers are single, but they ought to be double, because before a pigeon parts with her first brood, she begins to lay eggs for a second. Hence lockers of the following form are most convenient:



a b being the door to two lockers C, D, and e f being a partition opposite to the door, and projecting from the wall A B about two-thirds of the width of the locker; k m h g is a horizontal projection before the lockers of about four inches; besides this, there should also be a perpendicular projection of the same width at the ends

of all the lockers, to prevent the birds of one set from interfering or fighting with those of another; and in the last place, the pillar in the middle of the house should not reach too near the cupola, lest it should serve as a resting place for hawks, owls, and other enemies of pigeons.

I must not here omit two sorts of gates which I saw in Bucks, besides those in common use. The two I mean are a contrast to each other, and yet very good in their kind and places: the one is a rough gate made entirely of wood, without any iron-work whatever; it is six feet high, has five or six rough rails or *ledges*, with a cross-rail from the top of the swinging-tree, or pivot of the heart-tree, upon which the gate turns, across all the ledges to the bottom of the *head* of the gate. The pivots of the heart-tree move in grooves of thick pieces of oak fastened to the hanging-post.

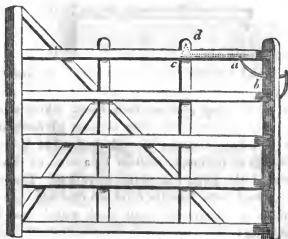


The

The above is used in Whaddon-chace, where there is much wood, and where it serves as a fence against deer. The other is a neat light gate at Fawley-court, belonging to S. Freeman, Esq. It is four feet and a half high, and the latch so contrived, that a person on horseback can easily open it without dismounting; the ledges and uprights are only two inches thick, and octagonal thus :



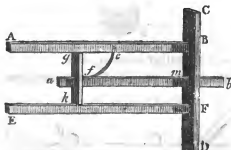
But 1 and 5 are rather broader than 2, 3, 4, the upper parts of the ledges, or 6, 7, 8, the under parts.



The catch of the above gate is a common spring, but the manner of opening it quite new, and easy for persons on horseback as well as on foot. From the upper ledge to the head goes a piece of large wire, a b, which

which passes through the head and pulls the spring back; *a b* goes into a groove under the ledge, and a wire, *a c*, catches it at *a*, and draws it towards *c* by a triangular piece of iron half an inch thick, which swings at the back of the upright at the point *d*, in a groove of the ledge. This triangular piece of iron hangs extremely convenient for persons on horseback.

The catch of a gate at Wavendon, belonging to H. H. Hoare, Esq. was noted as being very light and cheap. The following figure will serve to describe it.

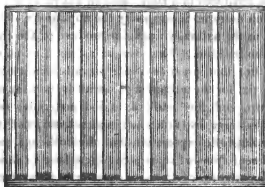


A B and *E F* are two ledges of the gate, and *C D* is a part of the head: *a b* is a catch made of wood, two inches deep and one inch thick, which moves through a groove in the piece of wood *g k* fastened to the two ledges, and also through the head at *M*; and it is kept to its proper position by a wire, *e f*, which moves at the point *e* upon the ledge *A B*. The gate swings both ways, and the catch *a b* fixes into a groove made in a semicircular small block nailed upon the post, thus:



A B is a part of the post, and a b d c is a semicircular block upon the post, with the groove c to receive the catch a b.

A window-shutter in a stable at Wavendon, belonging to H. H. Hoare, Esq.



This is made of deal laths three inches broad, with intervals half the breadth of the laths, for the air and light to pass through into the stable. Before this slips another shutter of exactly the same size and shape in a groove, so that the intervals between the laths may be immediately before those of the fixed shutter, or may be

be moved so as to be before the laths of the first shutter, and the laths of the moveable shutter may cover the intervals of the fixed.

A foot-bridge at Fawley-court was so formed over a ditch, as to prevent stock from passing. The bridge is moveable upon two pivots at its ends, and being heavier on one side than on the other, always hangs perpendicularly, except when any one walks upon its light side; it then, by the weight of the person upon it, lies horizontal or flat.

SECT. III.—REPAIRS.

It is not possible to speak in high terms of the general state of farm-houses and offices in Bucks: they are too often seen in a state, though not positively bad, yet such as by no means carry the appearance of such riches as the naturally apparent produce of the county ought to indicate. This can be ascribed to no other cause but that practice which prevails almost universally, viz. for the occupier or tenant to pay for workmanship, and the landlord to find materials; add to this, that very few farms are under leases, and there can be but little expectation that the buildings should be different from what are seen where farmers have no other security for continuance upon their farms, but the words or promises of their landlords, which can exist only during the lives of such landlords; the consequence is, that no farmer is willing to expend much upon the offices he possesses, and every one puts off any expenses of the kind, until he is obliged by the necessity of the case to do the repairs.

SECT.

SECT. IV.—PRICES OF BUILDING, MATERIALS,
AND ARTISANS' LABOUR.

THESE do not appear to be higher than in other counties. Sir John Dashwood King has built at Halton a very neat and elegant church in the Gothic style, of Portland and Tottenhoe stone, which cost not more than 3000*l*. It is warmed by a small fire by flues to convey the heat under the floor.

Lime is of various prices. At Brickhill, 2*s*. 4*d*. per quarter of eight bushels; at Hillesdon, it is 2*s*. 9*d*. per quarter; and at Wavendon, it is 3*s*. 6*d*. per quarter. At Buckingham, it is 6*d*. per bushel; and at Risborough, 9*d*. per bushel.

Bricks are generally from 38*s*. to 40*s*. per thousand. Those not more than 38*s*. are not so good, having many stones in them. At Amersham, they are 40*s*.; and at Buckingham and Risborough 45*s*. per thousand; at Brill, 42*s*. 6*d*. per thousand.

Freestone may be purchased at Olney for 2*s*. a cart-load, which will make three yards of wall between 18 inches and two feet thick.

Tiles.—These are generally flat. At Newport, they are 2*l*. per thousand; but at Buckingham 45*s*.

Pantiles at Newport are 1*l*. per thousand: nine-inch pavement, 4*d*. each; twelve-inch 6*d*. each; pavements nine inches by four and a half, 6*s*. per hundred.

Many kilns in Bucks burn lime, bricks, and tiles, over the same fire at the same time. At Bucking-
ham

ham there is one, the walls are 24 inches thick, and the room is a square of 14 feet, and its height 22 feet. This kiln burns 50 quarters of lime, which are laid at the bottom, and form arches in which the fire is made, upon the lime 8000 bricks are laid, and upon the bricks 6000 tiles. The tiles when burnt are ten inches long, six inches broad, and half an inch thick. These require 1500 of furze faggots, which are bought at 19s. per thousand.

Timber.—At Newport Pagnel, Riga fir is 5s. 6d. per foot; oak from 3s. to 3s. 6d. per foot; elm 15d. per foot; ash, from 16d. to 18d. per foot; red and white deals are alike.

At Buckingham, oak is from 2s. to 5s. per foot; elm, from 1s. to 2s.; and ash from 2s. to 2s. 6d. per foot.

At Fenny Stratford, large oaks sell at 8s. per foot.

SECT. V.—COTTAGES.

I COULD make no particular observations upon these buildings: they are, generally speaking, as good as are to be found in other counties. They have mostly gardens attached to them, or, if not, the cottagers are allowed to make themselves gardens by the side of the roads, and upon waste grounds: these are to be seen upon all the great roads through the county. Nothing more materially tends to teach the poor honesty, than this circumstance of allowing them to have property which they can call their own: it is by this means they can become practically acquainted with the value of property;

property ; and feeling how intensely they would deprecate all infringement upon their own, it may be presumed they would be less likely to make depredations upon that of other people. Habit will in this instance prevail as in other cases, and thus practice and habit will have the desired effect of producing more honesty amongst the poor than it is possible for the best delivered precepts to instil into them.

The only instance where great neglect was apparent in the cottages of the poor, was at Little Brickhill : they are said to be under a trust. Be that as it may, it is my duty to report, what must be seen by every one who passes through the place, viz. the cottages above mentioned are in a very bad state of repair ; and by no means sufficient to keep the inhabitants in any degree so comfortable as the generality of offices in the county for horses, cows, or even pigs would.

For the number of cottages in each parish, see Appendix, No. III.

CHAP. IV.

STATE OF PROPERTY.

SECT. I.—SIZE OF FARMS.

IT is impossible to enter upon this Section, the size of farms, without being reminded of the question which has been often agitated, What that size ought to be? Practically, the question is absurd; for undoubtedly it would be as difficult to assign that maximum, as it would to fix the quantum of fortune or of estate, beyond which no individual should possess. In this instance, accident and the general course of things must prevail: where land is poor, rents must be low, and a small tract will not be sufficient to maintain such houses and offices as are necessary for the large capital required on the part of the tenant. Farms, therefore, in such cases must be large, or the consequence will be, that farms cannot exist. Land in general in Bucks is rich, and accordingly it happens that the size of farms is moderate. The number of farms is 2039 (see Appendix, No. III.) Without pretending to extreme accuracy, it may be stated, that there is one farm of 1000 acres, one of 900 acres, four or five between 600 and 700 acres, ten between 500 and 600, twenty-four between 400 and 500, and that the rest are from 400 acres down to ten (see Appendix, No. IV.): thus the average of the size of farms is 179 acres. If, however, we take it for granted that the number of farms,

farms, as stated in the Appendix, No. III., is 2039, and that our computation of the number of acres of arable and pasture lands, as given in p. 6, is 328,590 acres, then it will follow that the average of the size of the farms is only a little more than 161 acres.

From these averages take the mean, and we have the average of the size of the farms in Bucks, 170 acres.

We will now state such particulars as were communicated either by the persons themselves who occupied the farms, or by those in whom there appeared no want of confidence.

At Cold Brayfield, there are only two farms containing about 700 acres, of which 400 are arable and 300 pasture. Mr. Whitworth, who occupies one of these farms, keeps upwards of 300 ewes; the lambs produced from which he sends to market in two years, after having twice shorn them: the average of their weight is then 20 lb. per quarter. Mr. Whitworth keeps three or four cows, and grazes about 60 neat stock, which are bought in Northamptonshire and at Leicester, on May-day and in June.

The principal proprietor at Olney is Lord Dartmouth. There are about thirteen farms containing from 50 to 300 acres each, the whole parish consisting of between 11 and 1200 acres, of which one-third is pasture.

At Emberton, adjoining to Olney, there are about eight farms, none of which exceed 250 acres: the whole parish consists of about 1400 acres, of which one-third is pasture.

Weston Underwood contains five or six farms from 100*l.* to 600*l.* per annum, of which nearly one-half is pasture, applied to grazing Hereford and Shropshire beasts.

The Rev. Mr. Drake, of Stoke Goldington, very kindly gave the following statement of the farms in that parish :

“ The parish contains ten farms in the hands of tenants whose sole or chief occupation is farming.

“ The first contains 280 acres, of which twelve acres are arable, and 268 woodland pasture.

“ The second, 237 acres, of which 148 are arable, and 89 meadow and pasture.

“ The third, 262 acres, of which 162 are arable, and 100 mostly woodland-pasture.

“ The fourth, 218 acres, of which 119 are arable, and 99 woodland-pasture.

“ The fifth, 110 acres, of which 98 are arable, and twelve pasture.

“ The sixth, 169 acres, of which 131 are arable, and 38 meadow and pasture.

“ The seventh, 80 acres, of which 68 are arable, and twelve pasture.

“ The eighth, 75 acres, of which 66 are arable, and nine pasture.

“ The ninth, 43 acres, all pasture, and chiefly woodland.

“ The tenth, the rector's farm in lieu of tithes, containing 235 acres, of which 196 acres are arable, and 39 pasture.”

This parish then contains 1709 acres, of which 1000 are arable, and 709 pasture.

Such is the general size of farms in the neighbourhood of Olney. Could such an accurate statement be procured throughout the county, the task of a Surveyor would be easy, and the information which he could give the public of the agriculture of a county, as minute as that of a single farm.

The

The following account, given by the Rev. R. Cautley, of the parish of Moulsoe, the whole of which belongs to Lord Carrington, is not less accurate nor less accommodating.

The parish of Moulsoe was enclosed in the year 1802; and contains 1527 acres 1 rood and 17 perches; of which 142 acres are wood, about 680 arable, and 705 pasture: there are five farms, including the rectorial farm given in lieu of tithes, besides about 60 acres lett to various people, of which about 18 or 20 are lett for the express purpose of accommodating the poor with milk.

		£.
The first farm contains 347 acres, of which the rent is		477
The second	206	300
The third	229	300
The fourth	249	340
The fifth	300	355

At Tyringham cum Filgrave there are 1800 acres, of which 700 are arable, and 1100 pasture: the farms contain from 200 to 500 acres.

Mr. Graves occupies, at Westbury, between 400 and 500 acres, of which one-fifth or one-sixth is pasture: he keeps 20 milch cows, 14 horses and a nag, and 400 sheep, of which 120 are breeding ewes.

Mr. Morgan, of Biddlesden, occupies a large tract of very rich land, which he applies to grazing: he is a gentleman of great respectability, but not very communicative on agricultural subjects.

A gentleman occupies a farm at Biddlesden, under Mr. Morgan: it contains 300 acres, of which half is arable, and the other half pasture, applied to the dairy.

At Eythorpe, and its neighbourhood, are estates belonging to the Earl of Chesterfield, who, with the greatest politeness, upon being applied to, desired his stewards there and elsewhere, to give all the information in their power upon the management of his Lordship's estates.

Mr. Cox, of Beachington in Waddesdon, occupies under his Lordship about 400 acres of pasture, and 36 of arable land: he keeps five horses, having much work upon the turnpike-road in carrying stones. Mr. Cox used to apply his pastures to the dairy principally; but now (1838) has only grazing beasts—Herefords, with some Devons. It is a fact stated by Mr. Currie, Lord Chesterfield's steward, that at Upper Winchendon, adjoining to Beachington, better butter is made, although the land is not so good as Mr. Cox's by 1*l*. per acre. In a dairy county, experiments stating facts, to which this paragraph applies, are highly necessary.

Stone contains 2560 acres, of which one-third is pasture, principally Lord Chesterfield's property. Mr. Woodman occupies under his Lordship 540 acres, of which 270 are ploughed. He keeps 12 horses in the yard in summer upon clover; buys sheep two, three, and four years old, and grazes them: he grazes beasts, and takes in agistment stock.

Mr. Chandler, of Dynton near to Stone, has a large grazing farm: he gives the preference to the Devon breed, being light of offal, and follows them with Scotch beasts—a practice by no means general in this county.

Mr. Westcar, of Kreslow, whose name as a grazier is deservedly known all over the world, and to whose excellent judgment of stock, and its management, any testimony

testimony of mine can be but of little avail, occupies under Lord Clifford about 900 acres, of which between 60 and 70 are ploughed, under no system but that of being subservient to the pasturage. There is no instance where the effect of great industry, and a perfect acquaintance with the nature of buying, feeding, and selling of neat stock to the best advantage, is more fully displayed than in this gentleman. The only advantage which this estate seems to possess above some others in this county, is the power of wintering stock, having a sufficient quantity of straw from the arable land.

At Berry-field, in the parish of Quarrendon, there are five farms from 150 to 400 acres, and but one which has any arable land belonging to it, and that has only seven acres, in the occupation of Mr. Rose, who has in all 345 acres, applied to grazing, and to taking in agistment stock.

Sir John Aubrey's estate, lying in the parishes of Chilton, Dorton, Brill, and Boarstall, consists chiefly of pasture, applied principally to the dairy. Mr. Parsons has a dairy-farm under Sir John, consisting of 250 acres, of which 19 are arable. He keeps from 60 to 70 cows, somewhat more than half a sheep to an acre, and about 14 hogs to a score cows in the summer, besides porkers in winter.

In the same neighbourhood, is a gentleman who rents 17 acres of arable, and 76 of meadow and pasture. He keeps three horses, 20 cows, and fats 12 hogs in a year: he has also about 50 sheep.

Mr. Hemming, of Chilton, occupies a farm under Sir John Aubrey, of which about one-third is pasture: he ploughs 350 acres, and has 120 in pasture. He keeps 300 sheep, viz. about 160 breeding ewes, and

140 lambs for store; milks 14 cows, and has 12 horses.

Upper Winchendon contains 1400 acres, of which 460 are arable, and 940 pasture, divided into ten farms, from 50 to 500 acres. Mr. Rose's farm consists of 300 acres: he keeps 300 sheep, eight cows, and nine horses.

Mr. Ewers, of Addington, occupies under General Paulet 150 acres of pasture always fed, and 100 always mown, and 30 acres of arable land. He keeps 50 cows, 50 sheep, and four horses.

T. W. Coke, Esq. of Holkham, in Norfolk, possesses between 3000 and 4000 acres at Hillesden, Cowley, and Preston, chiefly dairy-farms. Mr. Augustus Lynes, at Hillesden, occupies under him 400 acres, of which 100 are ploughed. He keeps 40 cows and 10 heifers; fattens 13 hogs, and porkers afterwards; and has 100 breeding ewes, of which he fattens about 40, with their lambs: he keeps seven horses and two colts. Mr. Lynes buys young colts, works them till they are six years old, and then sells them.

Mr. Morris occupies about 280 acres under the same landlord, of which he ploughs about 30: keeps 40 cows, five score sheep, and four horses.

Mr. Warr rents of the same landlord 200 acres of pasture, without any arable land. He keeps 40 cows, of which 10 are heifers, and four-score sheep, and breeds some lambs: he keeps also two brood mares.

Mr. Coke has five or six farms besides, lying in Hillesden, Cowley, and Preston, principally applied to the dairy.

At the Claydons, Twyford, Marsh Gibbon, and Edgcot, are dairy-farms.

Mr. G. Parrot occupies under the Marquis of Buckingham,

ingham 200 acres, of which 30 are ploughed: he keeps between 30 and 40 cows.

At Thornton, on the side of the road from Buckingham to Stony Stratford, T. Sheppard, Esq. occupies about 240 acres, of which 60 are ploughed. He keeps about 25 cows for milking, and some heifers to supply the dairy; nearly 300 sheep; of pigs, for store and for fattening, more than 20, and five horses.

Messrs. T. and J. Kitelee, of Castlethorpe, farm under Lord Spencer about 1300 acres, in two farms: about half their farms is pasture. They graze about 100 beasts each in the summer, and keep store cattle in the winter. Having the tithe farm, and a farm at Grafton, in Northamptonshire, they are enabled to clip about 1000 sheep each. They buy and breed colts, and sell them about six years old, after they have worked them two or three years. No farms are under neater management than these gentlemen's.

The Earl of Bridgewater has some dairy-farms in Bucks: they are generally half arable and half pasture. The pasture is half mown and half fed, and yet his tenants are obliged to buy hay.

Fenny Stratford contains about four farms—one of 50 acres, one of 150, one of 350, and one of 600: that of 350 consists of about half pasture and half arable, and that of 600 is almost all pasture; but the occupier has about 60 acres of arable land in another parish. Upon the farm of 350 acres, there are six horses kept; and upon that of 600, five.

Sympson, an adjoining parish, contains about 1000 acres, of which one half is pasture. There are six farms; one of 40*l.* per annum, two of 60*l.* each, one of 150*l.*, one of 220*l.*, and one of 280*l.*

H. H. Hoare, Esq. at Wavendon, occupies 600 acres, which he is endeavouring to rescue from the old mode of cultivation by high-raised stitches, with circuitous furrows to that form, which admits of modern improvements. Mr. Hoare at present keeps 250 sheep, of which half are breeding ewes, and 13 cows, and feeds two-score beasts, and for his team and ploughs has 13 horses, and four bullocks: Mr. Hoare uses also only two horses in a plough, driven by his ploughman with reins.

W. Lowndes, Esq. of Whaddon, farms 100 acres, upon which he keeps 19 cows and 140 sheep.

Mr. King, who farms under Mr. Lowndes, has 170 acres, upon which he keeps 40 cows, and about 80 ewes and lambs. In general, in the neighbourhood of Whaddon, one cow and one sheep are kept upon three acres; but on the yard-lands here*, by custom, one sheep is kept upon two acres, and one cow upon four, or thereabouts; and these are turned in with the herd at the time required or fixed by custom.

Mr. Cox, at Whaddon, occupies 250 acres of pasture, and keeps 60 cows.

At Winslow are all dairy-farms, with but little arable land. — Selby, Esq. has nine farms there, lett to different tenants:

One of 270 acres, of which 18 are arable.

The second of 220 acres, of which 35 are arable.

The third of 140 acres, all pasture.

The fourth of 160 acres, of which 40 are arable.

The fifth of 100 acres, of which 30 are arable.

* For an explanation of these, see Chap. II. Sect. 2, and Chap. XII. Sect. 2.

The sixth of 123 acres, all pasture.

The seventh of 61 acres, all pasture.

The eighth of 60 acres, all pasture.

And the ninth of 58 acres, of which 11 are arable.

There is another farm of about 40 or 50 acres, all pasture, and several small ones from five to 20 acres. The Vicar's allotment consists of nearly 132 acres of arable land.

No hay is allowed to be sold: not more than 60 cows are kept upon any of these farms, and in general, of sheep and cows, one of each to three acres.

Hoggeston consists of about 1500 acres divided into five dairy farms, of which the arable land does not exceed in the whole parish 200 acres. Cows are kept for the dairy three or four years, and then sold to graziers as stores. The skimmed milk is applied to fatten hogs: cubs are bought in the autumn, and as their lambs become fat, they are sent to salesmen for London market, as are also the ewes. These are the general practices of all the dairy farms.

Mrs. Hall, at Little Brickhill, occupies a farm of 500 acres, under H. Rose, Esq. She keeps breeding ewes for fattening lambs for the London market, and no other stock.

Edward Hanmer, of Stockgrove, adjoining to Great Brickhill, occupies forty-five acres, of which eight are corn, six turnips, nine or ten artificial grass, and the rest pasture: Mr. Hanmer keeps two cows, twelve pigs, 50 sheep, and four horses. He buys nothing for his stock, and sells nothing.

Great Brickhill contains between twenty and twenty-five hundred acres: of which two-thirds are pasture: there are not more than 200 cows kept here, and about

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one pig to a cow ; of sheep, two to three acres, and of horsts, four to 100 acres.

At Soulbury, of which Sir John Lovett is the principal proprietor, there are about 4000 acres, of which one-third is pasture. Sir John's are chiefly dairy farms, with a small proportion of arable land to each. Unfortunately, the only person who could have given information upon the subject of the agriculture of this place, was not at home when I had the honour to call upon Sir John.

The Rev. Dr. De Salis, at Wing, occupies the rectorial farm, consisting of between 200 and 300 acres, of which between seventy and eighty are pasture. The Doctor keeps between twenty and thirty cows, fat seven or eight hogs, from 320 to 560 lb. weight, and nearly forty porkers. He keeps more than 200 sheep, six horses, and a nag.

Mr. Hart, of Wing, keeps thirty cows, with twelve hogs, in the summer, and porkers in winter ; six or seven score sheep. The number of horses here is four to ninety acres, and not more than twelve to £00 acres.

Between Wing and Aylesbury, at Aston Abbots, a farm of 200 acres keeps 25 cows ; and from twelve to fourteen hogs are fattened in the summer by 20 cows.

One farm there consists of 400 acres, of which 100 are arable. It maintains 40 cows, 30 hogs, with stores, one sheep to an acre, and eight horses.

The parish of Halton, immediately below the Chilterns, contains 1457 acres, the property of Sir John Dashwood King. There are 173 acres of pasture, 95 of arable enclosed, and 532 open fields ; but being all Sir John's own property, are not subject to the injurious

rious customs of such lands where property is divided: Sir John's is laid into different parcels, according to the quality of the land, and left to different tenants, the good and bad being equally parcelled out amongst them. Upon the hills are 349 acres of wood, 135 wood closes and open hill, 31 houses and yards, and 38 roads and ways: the above form five farms. Sir John has a pretty small flock of South Downs kept under good management. In one field there appeared to be about 60 breeding ewes; in another, rams; in a third, ewe lambs; and in a fourth, wethers. He has a small dairy of Suffolk cows.

Mr. Moberley rents under Sir J. Dashwood King 190 acres, of which 28 are pasture and 162 arable, and keeps four cows and eight horses.

Mr. Smith, at Aylesbury, occupies under Lord Carington 300 acres, of which, rather more than one half is pasture. Mr. Smith buys a few cows to fatten in the winter: he winters also six or seven score sheep, and keeps nine horses and a nag.

Acton Chaplin, Esq. farms about 240 acres of land at Aylesbury, of which 160 acres are ploughed, 90 mown, and 50 fed. He keeps 50 cows, of which generally 20 give milk, which feed 12 hogs. Mr. Chaplin has also store pigs, which are fattened as porkers at ten weeks old. He keeps about seven score ewes for fat lambs to be sent to London, and of the ewes four score to be fattened, and the rest kept for folding. He has seven horses for his farm.

From the foregoing instances, which it is hoped are sufficiently numerous, of the size of the dairy farms, and farms of a mixed nature, in the north and in the middle of Bucks, in parishes where lands are enclosed, it will be manifest that the proportion of arable land to pasture,

ture, will not be more than one to sixteen, in the former case, and of five to three in the latter : we come now to the Chiltern Hills.

At Wendover, Lord Carrington and Lord Hampden have several farms from 150 to 200 acres : the whole parish contains about 2000 acres. Mr. Forster occupies 400 acres, of which 300 are arable and 100 pasture : he keeps 300 sheep, six cows, and fifteen horses. Such is the general proportion of stock in the neighbourhood : a farm of 100 acres ploughed cannot be carried on without five horses, but above that number, the horses generally are three or somewhat more to a hundred acres.

At Wycombe, upon Daws-hill farm, Lord Carrington has 520 acres disposed in this manner : 140 acres in park, 142 pasture out of the park, 160 arable, 68 sainfoin, and 10 meadow. Mr. Heath's account of the stock kept last year upon this farm, is very great ; and, as his Lordship observes, could not be continued. It was this : 250 ewes, 100 fat sheep, 120 four-toothed, 120 two-toothed, 160 tegs, and 240 lambs : in all, 990 of the South Down breed, besides 15 cows, 20 pigs, and 8 horses.

Mr. Lovell, of Lee, near Wendover, farms 320 acres, of which 80 are meadow. He keeps 200 sheep, 20 cows and heifers, and 10 horses.

At Chequers, J. Greenhill, Esq. has seven farms from 200*l.* to 500*l.* each ; the arable, at 50*s.*, and the pasture, at 37*s.* per acre : the proportion of pasture to arable is not 15 of pasture to 300 of arable. The stock is about one beast and one sheep to two acres : the cow is the Yorkshire, and the sheep Wiltshire. The general practice is to keep a breeding flock of ewes, and put South Down or Leicester rams to them. Some
sell

sell fat lambs and keep the rest for folding, till they are six-toothed, when they are fattened upon turnips: the number of horses is a team, or five to 100 acres, six to 200, and two teams or ten to 300. A team means as many horses as are used in a plough, which are here five, and sometimes six. The clover leys are sometimes broken up by four only a-breast.

At Great Missenden, in the road from Wendover to Amersham, is a well conducted small farm belonging to J. Ayton, Esq. managed by a Norfolk bailiff. Mr. Ayton ploughs about 120 acres, and keeps 40 in pasture. He has 100 South Down sheep and a few cows. The lambs are fattened for London market, and sold this year (1808) at 10*d.*, 9½*d.*, and 9¼*d.* per lb., the butcher taking the offal. He also fattens calves for London. Mr. Ayton keeps seven horses more, says his bailiff, than are necessary for farming his land, but not more than are necessary for the carriage of coals and other articles of house-keeping for the Abbey. Mr. Ayton has an excellent tract of meadows, and an opportunity of converting them to water meadows, which with London market so near, to take off the fat lambs, would soon requite the expense.

At Chesham, Mr. Pope farms under Lord George Cavendish 500 acres: has but a small proportion of pasture land; keeps 400 sheep and 13 cows, and suckles. Buys in heifers in autumn, and sells them out in the spring, sometimes with calf.

At Cheynies is an old seat of His Grace the Duke of Bedford, whose patriotic endeavours to serve his country, by uniting with his friend T. W. Coke, Esq. of Holkham, in Norfolk, in fostering every plan which in any degree tends to promote its agriculture, want not the testimony of my pen to record them; because they

they are indelibly engraved in the memory of those who have witnessed at Woburn Abbey His Grace's anxiety to carry on such plans in its favour, as his brother the late Duke had begun.

It will be a high gratification to the Board of Agriculture to hear, and undoubtedly ungrateful in me not to report, that the very first opportunity after my appointment to give an account of the Agriculture of Bucks, His Grace in the most handsome and condescending manner, invited me to meet him here, in order that he might procure me the most correct information upon the subject of his tenants' farming. In consequence of this invitation, I had the honour to meet him, and Mr. Coke, at Cheynies, on Friday the 8th of July (1808). His Grace has here between 500 and 600 acres in two farms, together with a water-mill, and small, but very productive water meadows.

Mr. Davis has the Duke's principal farm, which contains 300 acres, of which about 250 are ploughed. He keeps 20 cows, and suckles calves for London market; has 150 sheep and 10 horses.

Mr. Dodd, who hires the mill there upon a building lease, has twelve acres of meadow, upon which two cows and a horse were formerly kept. His Grace has added three acres of meadow to Mr. Dodd's occupation; and as Mr. Dodd has formed one acre and a half into water-meadow, he is now enabled to keep four cows and two horses all the year, and ten ewes with their lambs from Michaelmas to May; and besides mowing his water-meadows* twice, has taken in agistment stock to the amount of 5*l.* 17*s.* 6*d.* Mr. Dodd has an excellent breed of pigs.

* A more particular account of the produce of these meadows is given in Chap. XII. Sect. 4.

With the above, His Grace has in all, including his farms and cottages at Cheynics, the two Chalfonts, and at Chesham Bois, about 2135 acres, of which not more than from five to ten in a hundred are pasture, and 360 are woodland.

At Beaconsfield, there are about ten farms, and one or two of 700 acres. The general method of stocking here is this: suppose the farm to consist of 400 acres, if it is a good turnip year, a farmer will keep 200 wethers, with 100 ewes and their lambs, all of which will be fattened and sold, the wethers by Christmas, and the ewes and lambs as they become fat: a few milch cows are kept in the yard, and about four horses to 100 acres, fed in the summer upon green food in the stable. The proportion of pasture to arable land is very small.

Mr. Neighbour, of Beaconsfield, has more than 200 acres, of which two-thirds are arable: keeps 20 cows, 80 ewes for breeding and fattening lambs, and ten horses.

Mr. Heath, of West Wycombe, and his son at Marlow, occupy large farms, of which most is ploughed. They keep one sheep to an acre, with a few cows, of which they fatten the calves for market: when the cows are no longer fit for milking, or are about eight or nine years old, they feed them for the butcher. They keep three horses to 100 acres.

Mr. Manning, of Wycombe, farms between 200 and 300 acres; he keeps nine or ten cows, has a few sheep, and ten horses, and buys and sells young stock.

Mr. Taylor, of Lowlands, in Marlow, occupies 400 acres, of which 100 are meadow and pasture. He keeps 60 cows, 500 sheep in summer, and 700 in winter, sometimes one or two oxen, and eight or nine horses.

Mr.

Mr. Taylor has the management of 2000 acres, of which 300 are pasture.

Mr. Heather farms 300 acres, of which only 16 are pasture: he keeps 300 sheep, and 16 cows.

The parish of Fawley belongs to Strickland Freeman, Esq.: it contains 1700 acres, 500 of which are woodland, the rest are chiefly arable. It is divided into nine or ten farms, besides some detached pieces of land occupied by cottagers. Mr. Freeman himself occupies about 400 acres, of which 350 are under tillage. His stock of cows is about 20 of the Yorkshire breed, with two or three Alderneys: he grazes the Yorkshire, the Devon, and the Scotch oxen, and has a breeding flock of the improved Leicesters, about 200, and keeps 14 horses, and eight working oxen.

In that part of the county which is detached from the rest, and chiefly belongs to the Earl of Bridgewater, there is the same management as upon the Chiltern Hills. Mr. Horn, a tenant of his Lordship at Eddlesborough, occupies 150 acres, of which 12 are pasture. He keeps six horses, four cows, and six or seven score sheep, having a common to feed them upon.

Mr. Langton, at Cippenham Court, near Slough, farms 700 acres, of which there is but a small proportion of pasture. He keeps 200 breeding ewes, fats lambs for London market, and keeps 20 horses, with a team of Hereford oxen.

Owen Williams, Esq. occupies, at Horton, about 250 acres, of which 180 are arable; keeps three or four cows, and eight horses, and takes in agistment stock.

This part of Bucks, upon the great road from London to Bath, supports so many horses, that the farmers find a plenty of manure at the inns, and therefore are
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not under the necessity of keeping so much stock, as in those places where there is no such external resource.

In this account of some of the farms in various parts of this county, which are selected from the rest as being sufficiently numerous, and sufficiently indicative of the mode of farming pursued in the county, two circumstances very manifestly militate against the means of making that profit which should be derived from the respective farms : these are, upon the Chiltern Hills, a want of pasture ; and upon the dairy-farms, a want of arable land. The want of pasture upon the Chiltern Hills might indeed be supplied, and is, in some measure, by artificial food, and by cropping less. Under the present management, farmers are obliged in the spring to part with their neat stock, or send them to those pasture-farms which take in agistment stock, at the rate of perhaps 5s. or 6s. per head per week ; and upon the dairy and pasture farms, where there is no (or but little) arable land, farmers must see a great waste of food upon their pastures, or be much distressed for want of straw, if they attempt to keep store cattle : indeed they are generally obliged to sell part of their stock, and often to a great disadvantage, in the autumn. But this is not all ; for in order to make manure for such pastures as they are obliged to mow, they must buy straw, if possible ; and at what a dear rate must this be done ? and upon what farms, let me further ask, can it or ought it to be done *systematically* ? If it is allowed to farmers upon the Chiltern Hills to sell straw, the consequence is, they will grow too much corn for the sake of selling the straw, and thus prevent what ought to be most carefully attended

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to, the means of keeping as much stock as possible, by growing a large proportion of green crops, which will enable them to carry more meat to market, and, by keeping up their land by manure, to produce more grain per acre, and more straw.

As to the want of arable land, to enable the dairy-men to winter more stock, and to make more manure, it is difficult to say how this ought to be corrected. The landlord is too frequently sensible, in such cases, of the ignorance of his tenant in the management of arable land, and therefore dares not trust him to break up any pasture; or has been so long accustomed to lett his land under the same circumstances as exist at present, that he cannot bring his mind to consider the propriety of such a measure. Besides, it is a nice question to decide, what should be the proportion of arable land upon a given farm proper for grazing or the dairy, according to the present method of conducting such a farm in Bucks? and this being decided, there would still be a further question, what should be the least quantity of pasture upon a given number of such acres, in order to keep the same quantity of stock as would be kept under the first supposition? There are farmers who maintain, that, upon a given number of acres of such a quality as not to carry in pasture more than a bullock of 90 stone (8 lb. to the stone) upon two acres, one-fourth of pasture is enough; and that the remaining three-fourths might be ploughed, and yet the same stock be kept as in the case if none be ploughed; for they maintain, that the straw and artificial green food grown, would produce more than an equivalent for the three-fourths formerly in pasture: if so, the corn grown would be all saved to the public, and would pay the farmer the increase of expenses. It would require so much

much of *supposition* to make this clear upon paper, that few would be convinced by calculation : let some spirited farmer shew it by practice, and lay the facts before the public, and the point is carried.

SECT. III.—RENT.

THE rents, as they are set upon the Chiltern Hills and the south of Bucks, appear to be moderate, and to do credit to the landholders, whose object must be, not to keep rents so high as to render farmers little better than day-labourers with the power of bailiffs, nor so low as to make them careless and slovens. They should be so regulated as to be spurs to industry, by enabling farmers to make such an appearance in the world as is consistent with their profession, and by actuating them to carefulness and diligence.

At Wendover, rents are 1*l.* per acre. The hills are here some of them very high, and much exposed to north winds.

At Lee, near Wendover, rents are 20*s.* per acre, tithe-free.

At Checquers, rents are, for arable land 30*s.*, and for pasture 37*s.* per acre ; but this includes tithe.

At Little Hampden, 30*s.* for arable; and 37*s.* for pasture: the pastures will carry one beast and one sheep upon two acres.

At Great Missenden, 12*s.* per acre.

At Chesham, which is a very large parish, and contains various soils, the average of rents is 1*l.* per acre.

The old rents at Cheynies are very low, and the pre-

sent advanced rents do not exceed 14*s.* per acre, exclusive of tithe.

I do not state from authority the rents of land at Beaconsfield, but I believe they average 1*l.* per acre.

At Wycombe, and Great Marlow, lands are from 18*s.* to 22*s.* per acre: some are worth 25*s.*

The rents of Fawley Court are from 10*s.* to 18*s.* per acre.

At Prince's Risborough, rents average 18*s.* per acre. Here is much open fields, some upon the hills, and some in the vale, various in worth.

At Amersham, the average of rents was stated to be 16*s.* per acre.

At Salt-hill, rents are from 14*s.* to 35*s.* per acre.

At Horton, they are 45*s.* per acre, tithe-free.

At Eddlesborough, Mearsworth, and some adjoining parishes, where there is much open field, rents rise from 7*s.* to 20*s.* per acre: some pastures there lett from 20*s.* to 30*s.* per acre.

The average rent of the above district, which is meant to include all the Chiltern Hills and the south of Bucks, is 20*s.* 6*d.* per acre.

We will now state as many examples as we can, of rents upon dairy-farms.

At Waddesdon, lands lett from 28*s.* to 36*s.* per acre: one farm there of 250 acres, pays 340*l.* per annum rent; and some near it, 3*l.* per acre.

At Quarrendon, rents are from 40*s.* to 53*s.*, tithe-free.

In the Vale of Aylesbury, lands are lett from 1*l.* to 3*l.* per acre. This high rent, however, of 3*l.* per acre, is to be ascribed partly to local circumstances; for although many acres in this Vale are rich, yet there are
but

but very few and very small spots of pasture, where a bullock of 90 stone (8 lb. to the stone) can be grazed upon an acre. It is an incontrovertible fact, that a considerable part of the property within the township of Aylesbury has, within a few years (about 332 acres at Westcote and Waddesdon only *four* years ago), been sold by auction and otherwise, in lots, tithe-free; and the average price can scarcely be stated more than 50*l.* per acre. The 332 acres just mentioned, were sold for 11,000*l.*, and the outgoing expenses (quit rents and land-tax) were not great, except one annuity of 52*l.* to a life of 70, and another of 36*l.* to the longest life of two, each of whom was 41 years old. It was not a question with me, nor does a doubt exist in my mind, but that grazing lands in the extreme parts of the county, I mean Biddlesden on the north-west, and Snelson on the north-east, and along the Ouse at Tyingham, are equally as rich and fertile as any in the Vale of Aylesbury, except the spots above alluded to in Quarrendon and Dorton.

The pastures at Chilton, Dorton, &c. lett from 40*s.* to 50*s.* per acre: one farm of 93 acres letts for 152*l.*, tithe-free; another of 230 acres letts for 500*l.* per acre.

At Chersley, rents are 40*s.* per acre.

At Winslow, rents rise from 1*l.* to 2*l.* per acre.

Rents at Hanslope are 22*s.* per acre.

Mr. Westcar will forgive the mistake, if it is one, to state, that the rent of Kreslow is 30*s.* per acre.

From these instances of the rents upon the dairy-farms, or farms of pasture, the average is 41*s.* per acre, tithe included.

The farms of a mixed nature will be found in the following accounts of rents:

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At Cold Brayfield, Olney, and the whole district round them, rents may generally be estimated at 1*l.* per acre.

The arable land at Olney, lets from 10*s.* to 25*s.* per acre, and the pasture from 30*s.* to 3*l.*

At Weston Underwood, rents are 25*s.* per acre.

Farms at Stoke-Goldington, do not average 15*s.*; for see page 59, where is an account of ten farms there, and the following were the rents :

The first	of 280 acres lets for	£. 187	0	0
The second	— 237	187	0	0
The third	— 262	153	3	6
The fourth	— 218	151	10	0
The fifth	— 110	93	19	0
The sixth	— 169	140	10	0
The seventh	— 80	77	0	0
The eighth	— 75	53	0	0
The ninth	— 43	46	19	0
The tenth	— 235	220	0	0

I have since learnt that the above farms have been raised, and that they are now from 1*l.* to 23*s.* per acre, except the tenth farm.

Rents at Filgrave are somewhat more than 25*s.* per acre, exclusive of tithe, and with tithe 30*s.*

At Moulsoe, rents are a little more than 26*s.* 7½*d.* per acre.

At Castlethorpe and its neighbourhood, farms lett from 20*s.* to 25*s.* per acre. The tithe farm there lets at 22*s.* per acre.

In the Vale of Aylsbury, rents are from 1*l.* to 30*s.*

At the Brickhills, land averages 25*s.* per acre.

At Fenny Stratford and Sympson, rents are from 25*s.* to 35*s.* per acre.

At

At Westbury and Turweston, rents are 20s. per acre.

At Winchendon, rents are from 20s. to 40s. per acre, tithe free.

At Hogston, rents are 30s. per acre.

At Buckingham, 30s. per acre.

The average of rents upon the farms of a mixed nature, appears to be from this statement 25s. 10d. per acre.

Recapitulation.

Per Acre per Annum.

The average rent of the arable farms, is	£.	1	0	6
That of the dairy farms,		2	0	0
And that of the farms of a mixed nature,		1	5	10
		3)	4	6
			4	

Whence, the average rent of the whole, is £. 1 8 9 $\frac{1}{2}$

This, however, is too much, because in the rent 2l. per acre for the dairy-farms, tithe included, and therefore deducting 3s. 6d. per acre for tithe, the average rent of the dairy-farms cannot be stated at more than 1l. 16s. 6d. per acre; by which alteration, the average rent of the whole county can be estimated only at 1l. 7s. 7 $\frac{1}{2}$ d. thus,

Average rent of arable farms,	£.	1	0	6
----- dairy,		1	16	0
----- mixed,		1	5	10
		3)	4	2
			10	
Average of the whole,	£.	1	7	7 $\frac{1}{2}$

SECT. IV.—TITHES.

THERE is no part of the enquiry into the state of the Agriculture of this county, more pleasant to a Surveyor, and particularly to me whose principal income is derived from the Church, than that of tithes. Of the 204 parishes in Bucks*, 82 are tithe free, that is, in general the farms are exonerated from tithes, by land given to the church as glebe in lieu of them; thirty are partly and chiefly tithe free, three pay a corn rent (as it is called); one has a modus, and the remaining 114 are tithable, of which it does not appear that more than one is tithed in kind, and that is Great Marlow. The method of paying by composition is general, and that composition fair and moderate.

At Lavenden, the Rev. Mr. Burton has a farm in lieu of vicarial tithe, which lets for 163*l.* per annum.

At Emberton, Mr. Brook, of Olney, says, the rectorial farm, which has upon it a cottage with a hovel for cows, lets for 400*l.* per annum, and is in lieu of the tithes of 1400 acres, of which the average rent is 24*s.* per acre.

The rectorial farm at Stoke-Goldington, consists of 235 acres, of which 196 are arable, and 39 pasture, with a farm-house, barn, stables, and out-houses for stock, lets for 220*l.* per annum. This farm, together with the tithe of 75 acres, is in lieu of the tithe of 1709 acres, of which 1000 are arable. The average rent of land here is now 23*s.* per acre, but the rents have all been raised lately except that of the Rector.

* See Appendix, No. V.

At Westbury the tithe is paid by land, with a few customary payments. In all instances of commutation, care should be taken to accommodate all the parties concerned. In this allotment an unaccountable oversight took place, much to the injury and disquiet of the clergyman. A triangular piece of pasture, consisting of about half an acre, bounded by the garden of the homestall of the clergyman on one part, the church-yard on the second part, and the public road to the church on the third, with a path through it to the parsonage, is not allotted to the church. Necessity will compel the resident in this parsonage to hire the half acre thus left out from his glebe, at any rate, however exorbitant.

The Rev. Mr. Rush, at Stone, has a farm of 72 acres, together with a payment of 36*l.* in lieu of the tithe of certain open fields, and 6*l.* or 7*l.* for other tithe, as a commutation for the vicarial tithes of the whole parish, consisting of 2500 acres, of which two-thirds are arable.

At Walton, a hamlet to Aylesbury, consisting of 1000 acres, an allotment of 200 acres was given in lieu of tithes. This was lett upon a lease of 21 years, and the tenant agreed to lay out 300*l.* in building barn, stables, &c. necessary.

At Wendover, a most advantageous commutation took place. Before the enclosure, the Vicar did not receive more than 50*l.* per annum for tithe : since that time the land allotted him has lett for 140*l.* per annum (viz. 1*l.* per acre), in lieu of the vicarial tithes of 200 acres. This allotment was lett upon lease for 21 years, by the Commissioners under the Act of Enclosure, the tenant engaging to expend 100*l.* upon the buildings necessary, for which he was to be allowed an annual payment,

ment, so as to be repaid by the end of his lease. This lease is not renewable.

At Weedon, the allotment of land in lieu of tithe, was one-fifth of arable and one-eighth of sward or pasture; viz. 302 acres 3 roods 20 poles. These now lett for 422*l.* 5*s.*

At Newport Pagnel, one-fifth of the arable land was given in lieu of the great tithes. This is a lay-impropriation. The Vicar is paid by a subscription added to Queen Anne's bounty.

At Sympson, near Fenny Stratford, the farm which is in lieu of the tithes of 1000 acres, is worth about 300*l.* per annum.

The whole parish of Drayton Parslow contains 1721 acres 3 roods 22 poles, valued (or as the term is, *qualified*) at 1774*l.* 10*s.* 8*d.* for which Dr. Lord received in lieu of tithe, 370 acres 2 roods 11 poles, qualified at 393*l.* 7*s.* 11½*d.* The average price at present is 1*l.* 3*s.* 11½*d.* per acre, which makes the living worth 444*l.* 13*s.* 6*d.* What a pleasure it is to see the value of church land keeping pace with all other landed property, and no eye of jealousy watching its progress, and at the same time, in such instances as these, religious duties, as well, if not much better attended to by the inhabitants, and the character of the clergyman unimpeached by the scandalous tongues of reproach, for claiming his just dues.

At Horton, the tithes were commuted for by one-fifth of arable and one-seventh of pasture.

The Vicar's farm at Little Brickhill lets for 63 guineas per annum: the great tithes are paid by a farm belonging to the See of Canterbury, which is lett for 21 years, upon a lease renewable every seven.

At

At Castlethorpe, lands are tithe free. The tithes belonged to the corporation of Lincoln, and were commuted for by a farm in the usual way. This farm lets for 22s. per acre.

At Moulsoe, the Rev. Mr. Cautley has a farm adjoining to an excellent parsonage house. The farm consists of 229 acres, in lieu of the tithes of 1527 acres, of which 142 were wood, 680 arable, and 705 pasture: he received one-fifth of arable and one-ninth of sward. There is also a peculiarity in this allotment which is by no means to be recommended, viz. an exemption from poor's-rate. This land was valued at 300*l.* per annum. It cannot now be worth so little as 400*l.* per annum, taking the rent at 25*s.* and the tithe and poor's-rate at 10*s.* and presuming the house to be estimated at something.

Many more instances of the same kind of allotments in lieu of tithes, might have been procured, but the rest are under the same circumstances as the foregoing; and these are sufficient to shew to those who wish to examine the subject, how desirable such allotments are in lieu of tithes, and to give that statement which is required. It will not be forgot, that these allotments took place at the time of enclosing open fields and commons, and therefore are not perfectly applicable to enclosed farms. There are, however, some instances, where they might be applied to enclosed lands, and those not a few, if the Legislature would enable the parties interested to do it.

The instances of commuting tithe by a corn rent, fortunately are very few. The method adopted at Sherrington was this:

1. By the Act of Parliament for enclosing the open fields

fields in that parish, the Commissioners were enabled to set out for the parson, in lieu of the tithes of the common fields, one-fifth of the arable and one-ninth of the pasture; and of such homesteads as had no right in the common-fields, the tithes were commuted by a payment in money for one-fifth of their arable and one-ninth of their pasture, according to the value fixed by the Commissioners, which payment went towards defraying the parson's expenses of the Act, &c.

2. The lands thus set out for the parson were annexed to the lands of the several proprietors, in proportion to their property, and the annual value of such lands respectively fixed.

3. The average price of a Winchester bushel of wheat for 21 years preceding, was ascertained by the London Gazette, and from thence bushels of wheat were substituted to be paid for by the respective proprietors, instead of their lands set out and allotted in lieu of tithes.

4. It was ascertained, that the value of one-fifth of the arable and one-ninth of the pasture, was nearly 342*l.* 6*s.* 4½*d.*

5. The average value of a bushel of wheat 21 years preceding, was 5*s.* 6½*d.*; and therefore the number of bushels of wheat corresponding to 342*l.* 6*s.* 4½*d.* was about 1235* bushels and a fraction.

6. Instead of the value of land, therefore, the parson was to receive the value of 1235 bushels of wheat, at 5*s.* 6½*d.* per bushel, and that parcelled out amongst

* This is the number which appeared in the account delivered to me: it is greater than it ought to be by nearly half a bushel, and probably is a surplus arising from the sale of the lands which had no right in the common-fields.

the several proprietors, according to the value of the lands annexed to their property out of the lands set out by the Commissioners for the parson, in lieu of tithes.

Thus far the parson sustained no loss, the land allotted him being a fair substitute for his tithe, equivalent to it, and improvable with it, lett indeed, not by himself, but by his country for 21 years, and for a rent sufficient, because it was the same for which all other lands in the same neighbourhood were lett: and could the same principles be resorted to at the end of every succeeding 21 years, no other difference would exist between his property and that of any landlord (who gives his tenants 21 years leases), but that in the one case the Legislature (*i. e.* a commission from the Legislature) lets the land, and in the other the proprietor himself. The great hardship arises from substituting a mode of ascertaining that rent, which is in no instance a necessary test of its value. For according to the Act of Parliament,

7. At the end of every 21 years, if the average price of a bushel of wheat for 21 years preceding, differs by 3*d.* from that of the last average ascertained, a fresh agreement may be demanded, and the price set according to that average for 21 years to come upon the number of bushels originally fixed; but if there is not that difference, then no alteration is to take place.

Now as the number of bushels of wheat is unalterable, the value of the tithe to be paid to the parson, or the rent of his allotted land, increases or decreases only with the average price of wheat for 21 years preceding. But every farmer knows that such average price has nothing to do with, nor has any dependence upon, either the improved value or the rent of land.

The above may be stated algebraically, thus:

25

Call

Call the value of $\frac{1}{7}$ of the arable and $\frac{1}{7}$ of the } a
 pasture }
 The average value of a bushel of wheat for 21 } b
 years preceding, }
 And the number of bushels of wheat, n
 and then, in the first instance, $n = \frac{a}{b}$, and therefore
 $a = n \times b$, now $n = 1$; therefore a ought to vary
 as b .

But in cases of enclosure, the rent of land (a) increases (as will be seen in the Chapter of Enclosures) double and treble its original value within a few years; whereas b has little or no dependence upon that value, and may as well, with respect to that value, decrease as increase.

Thus, in point of fact, the average price of wheat of 21 years preceding*, was per bushel,

	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
In the year 1721 somewhat more than	4	7	not	4	8
1742 —————	4	5	—	4	6
1763 —————	4	1	—	4	2
1784 —————	5	9	—	5	10

In this case, then, had such a mode as that called a corn-rent, taken place at Sherrington in the year 1721, no alteration in the parson's income could have taken place before the year 1763, a space of 42 years; and then it must have been diminished from 4*s.* 7*d.* per bushel, for 1235 bushels, to 4*s.* 1*d.*; and such a lessened income must have remained till the year 1784, for 21 years, during which time, if 5*s.* 9*d.*, the average price of a bushel of wheat, were the true test of

* This is taken from the tables given in the Appendix, No. XVIII., of the General Report of Enclosures.

the value of land, the parson's income ought to have been increased, instead of which it is decreased.

In truth, this is a mode of paying the church little better than a *modus*, and may, in certain instances, be worse: it is attended with much more inconvenience to the parson, and liable to create animosities and disputes between him and his parishioners, without enabling him to compromise such disputes, otherwise than by foregoing just demands. It is to be feared, sectaries increase in such instances; and it is beyond dispute evident, that the advantage of the church does not, either in temporalities or spiritualities.

There is one parish subject to a *modus* throughout, and some others claim it in part.

At Marlow, the great tithes belong to the Dean and Chapter of Gloucester; they are left to the Rev. Mr. Close, upon a lease of 21 years, renewable every seven, and taken in kind. There are two unusual circumstances to be noted here: 1. that the hay and after-math are reckoned amongst the great tithes; and 2. that the hay is tithable when it is upon the cock.

The composition for tithes is generally such throughout the county, as to make them by no means grievous to the farmers: it is, as was said before, fair and moderate. This may require explanation, because it seems to presume that a composition, that is, an agreement made between a farmer and a parson, to pay in money the value of the tenth of the produce of his farm, may be *unfair* and *immoderate*; and this, it may be contended, is impossible, because, they say, if it were, the farmer would not agree to it: but that is only *begging the question*: as well may a farmer agree to pay an unfair composition, as a parson demand it. If those who take up the question will consider it impartially, they

they will find, that the value of the tithe of a farm is to the farmer himself much greater (perhaps by one-third), than to the parson: the farmer has but very little additional trouble or expense, on his part, to collect the tithes of his farm; whilst to the parson, the capital required, and the outgoing expenses of rates of collecting, of thrashing, and of carrying to market, are a most serious evil; so great a drawback, as to render the real profit of the tithes to him not more than two-thirds of the whole value, under the most favourable circumstances—I mean local circumstances, such as proper barns and offices, an equal and well-disposed variety of property in the parish, the form of that parish, together with the roads, and the situation of the parsonage-house, and glebes belonging to it—for these will all have effect upon the outgoing expenses of the parson. If then such a composition be made, as will take from the farmer a part of that profit which arises to him if he collects, over and above that which the parson would derive after paying his outgoing expenses, had he taken his tithes in kind; surely it is not unreasonable to say, that such part of the composition is more than the parson can be thought to be *fairly* and *moderately* entitled to.

Much might be said upon this subject, were it consistent with the office of a Surveyor of the Agriculture of a County, to enter further than an explanation of his own terms.

The composition for tithes at Amersham is 4*s.* and 5*s.* per acre.

At Risborough it is 5*s.*, and at Cheynies 3*s.* 6*d.* per acre.

Tithes are compounded for at Fawley Court, at the rate of 4*s.* and 6*s.* per acre.

The

The Rev. Mr. Causton, at Turweston, receives a composition of 5*s.* per acre. The rent of land is here 1*l.* per acre, and there is much open field.

The tithe at Water Eaton for yard land is 4*l.* for 30 acres; at Fenny Stratford, it is 4*s.* and 4*s.* 6*d.* in the pound.

At Buckland, 5*s.* per acre, and the acre is scarcely more than three roods.

At Wavendon, notwithstanding it has been lately enclosed, no commutation for tithes has taken place: the composition is 5*s.* 6*d.* per acre.

In general, the average is 4*s.* 6*d.* per acre.

SECT. V.—POOR-RATES.

It is strange, that employment for the poor should not have the effect of diminishing the poor-rates; but so it is. Every manufacture independent of the agriculture of the country, brings expenses upon the land; and those of this county militate very much indeed against its agriculture. The making of lace, and the platting of straw, employ all the women, boys, girls, and children, throughout the county: it is impossible to pass a poor-house, without seeing some persons so employed. In towns, are schools of lace-makers and straw-platters; and so advantageous are these employments, that young women can earn from 9*d.* to 16*d.* per day readily; and in the straw manufactory, Mr. Grace, of Risborough, and Mr. Howard, of Buckland, informed me, that last winter some women earned 30*s.* per week. The consequence is, that the farmer suffers: no women nor young persons will work in the field;

BUCKS.]

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and

and the fact is, that but in very few places in Bucks were women to be seen in the field, making hay, or weeding. From these considerations it might be presumed, that the poor-rates of the county were not so high as in other counties, where the poor have no such resource. Not so.

The rates at Stony Stratford have been 21*s.* in the pound, and are now from 12*s.* to 14*s.*

At Newport Pagnell, they are 6*s.* in the pound.

At Olney, from 8*s.* to 11*s.* in the pound.

At Stoke-Goldington, from 8*s.* to 10*s.* in the pound.

At Castlethorpe, from 3*s.* to 4*s.* in the pound; but here, it must be observed, there are only two farms, belonging to two brothers, Messrs. T. and J. Kitelee.

At Fenny Stratford, 5*s.* 6*d.* in the pound.

At Turweston, 6*s.* in the pound.

At Stone, 4*s.* and 5*s.*; and at Waddesdon, 7*s.* in the pound.

At Aylesbury, 6*s.*; at Wendover, 7*s.*; and at Amer-sham, 4*s.* in the pound.

At Whaddon, 3*s.* and 3*s.* 6*d.*; and at Winslow, 7*s.* and 8*s.* in the pound.

At Brickhill, 6*s.* and 7*s.*; at Soulbury, 7*s.* and 8*s.*; and at Wing, 2*s.* 6*d.* in the pound.

At Cold Brayfield, 2*s.* in the pound; and at Weston Underwood, 3*s.* in the pound.

At Winchendon, 3*s.* and 4*s.* in the pound.

At Risborough, 10*s.* in the pound; at Chesham, 4*s.* and 4*s.* 6*d.* in the pound.

At Buckland, 5*s.* and 5*s.* 6*d.* in the pound.

At Horton, 3*s.* and 4*s.* in the pound.

From this account, the average of the poor-rates is 5*s.* 2½*d.* in the pound.-(See Appendix No. VI., where an alphabetical account is given of them).

SECT. VI.—LEASES.

WITHOUT a lease, no tenant can be expected to make any lasting or valuable improvement upon his landlord's estate; and with a lease containing bad covenants, if the one is benefited, it is most probable the other will be injured. Upon the Chiltern Hills, where the land is mostly arable, much industry is required on the part of the farmer, and a large capital is necessary; and upon the dairy-farms, much is required to be done in banking and draining*. It cannot be contended that, upon farms under such circumstances, leases are not necessary. If I lend a sum of money to a neighbour, I require of him some security, either of land (if the sum be large), or of his person (if it be small), and no one thinks it unreasonable, nay, the custom of the country justifies me in demanding security: such security is always given. With what justice then can it be expected, that a farmer shall provide a capital of 1000*l.* or more, for every 100 acres he hires, unless he can have security for the return of that money with interest, and with a proper remuneration for his industry and his ingenuity, independent of any consideration on the score of the public, who have a right to find that, besides the landlord and the tenant, they themselves are also considered in the management of the land upon which they are born, and to which they look for sustenance and protection, and that therefore the improvement of estates is considered as of importance to them?

Now the nature of agriculture is such, and the means

* See this explained in Chap. VIII. Sect. 2.

of improving land so slow in operation, that in general, one or two years are not of sufficient length to return the proper interest due upon the advanced capital, and certainly not, where such improvements are to take place as are necessary in Bucks, in most parts of which much is wanting. If it be objected, that leases tend to render farmers independent of their landlords—be it so : in that case, let the landlord provide against the improper treatment of his land, by covenants formed accordingly, so as to provide that, at the end of the lease, the land shall be found in a better state than it was at the beginning. It is not in my recollection, nor within my observation, that such independence has been attended with any material ill consequence to a landlord : facts to shew this are, I believe, but very few upon record ; whilst the bad effects of letting farms without leases, stare you in the face throughout the county of Bucks, and are too apparent every where. In the county of Norfolk, some of the largest farms are lett upon leases for 21 years, and no where can there be more of independence on the part of the farmer ; and yet I have never heard of more than one instance, upon the estate to which I allude, where a farmer was turned out of his farm at the end of the lease, and that was for neglect of covenants : now it is hardly to be expected but that such would be the case, if independence rendered tenants ill-behaved, saucy, or rude to their landlord ; but the truth is, as I have had opportunities to observe this tenantry under the 21 years leases, they are extremely attentive to their landlord in all instances, willing and desirous of obliging him in every respect, and attached to him as to a father, and particularly anxious to adopt any well authenticated means of promoting their agriculture and
improving

improving their stock ; not so prejudiced in favour of old practices, as to suppose it impossible to introduce new ones better ; nor so idly fond of variety, as to be the first to adopt every adventurous scheme.

These observations are applicable to, and intended for, such farms in Bucks, as require much improvement, or a large capital to be expended upon them. If one man builds upon another's land, he receives a long lease, sometimes for 21 years, renewable after a given number of years, and sometimes for 99 years : the cases are common and various ; but no case exists, where much money is risked upon another's property without a lease : the case ought to be the same upon all such lands as require improvement, or demand a large capital. Upon the dairy-farms, there is not the same necessity for leases as upon the arable farms ; because the capital of the farmer is not so much expended upon the land, but is found chiefly in his own personal property, his goods, chattels, and stock : I say the same necessity, supposing, however (what is not the case in point of fact), that there are dairy-farms where no improvement is necessary, and where, of course, the farmer is not required to expend upon the land more than is sufficient to give him a return in the course of a year. It is too true, that much is required to be expended upon almost every field on the dairy-farms ; and from which landlords, by giving leases not so long as upon arable farms, might receive more rent * ; their tenants become industrious, and reap a profit almost inconceivable ; and the public receive a much larger supply in the market, than it is possible the present system and the present practices can produce.

* We shall endeavour to illustrate this.

Very few leases are given in Bucks, and some of them contain covenants very objectionable.

Lord Chesterfield gives leases for 21 years : the general covenants are said, by his steward, Mr. Currie, to be, to allow three crops and a fallow.

Leases are granted at Marlow by Sir Richard Claydon, for 14 years, without any restrictions except during the last three years.

Lord Carrington has granted leases at Moulsoe for 14 years, with restrictions for the last three years, viz. that one-third of the land shall be fallowed in the third year before the end of the lease, and the next crop be laid down with grass seeds ; one-third in the second year before the end, and one-third to be left to be fallowed in the last year by the succeeding tenant.

Sir John Dashwood King grants twelve years leases, determinable at the end of every three by either landlord or tenant.

At Risborough there is one lease for 21 years.

In the neighbourhood of Salt Hill there are some leases, but tenants are not prevented from selling hay or straw.

Mr. Sheppard, of Thornton, gives running leases for 21 years, determinable at the end of any three after six years, that is, at the end of 9, 12, 15, or 21, if either party, without assigning any reason, shall think proper to give half a year's notice previous to Lady-day time, when they begin and end.

At Olney, no leases are granted, but running agreements take place from year to year, to continue in force until either landlord or tenant shall give notice, with covenants to pay the tenants for their improvements, in case they do not enjoy them 14 years.

Mr. Freeman, of Fawley Court, "letts most of his farms

farms upon leases of 21 years, determinable at the expiration of seven or fourteen years, at the option of either landlord or tenant. In one instance in the parish of Fawley, and in some others, Mr. Freeman has deviated from this practice in favour of two or three enterprising farmers from Northumberland, who are practising with considerable success, the mode of farming for which that county is so deservedly celebrated. To these tenants he has granted 21 years leases on the most liberal terms, as it is his wish to introduce that system of husbandry, as far as it is practicable, upon all his estates."

It should be observed, that Mr. Freeman, convinced that the practices of farming pursued by his old tenants were bad, offered them new leases for 21 years at very moderate rents, provided they would alter their course of husbandry, and be directed by his steward, Mr. Forster, whom he has introduced from Northumberland: in short, provided they would practise the Northumberland husbandry. These terms they refused. The consequence is, Mr. Freeman has raised his rents, and planted around him a colony of Northumberland farmers.

Lord Eardley lets his farms upon ten years leases, obliging his tenants to bank all the land in their possession, which requires it, in that time.

At the beginning of this Section, an observation is made upon bad covenants, as if such existed in leases in this county; and such really do exist. Surely the following, which makes no provision for properly manuring or cleaning land, but on the other hand, gives the tenant an opportunity of exhausting and rendering it foul by a succession of three crops, cannot be deemed good by an impartial good farmer. "And also, that

he the said A. B. his executors, &c. shall not mow more than once, &c. or *take more than three crops of corn successively* from the arable part of the said demised premises, without the intervention of a dead fallow, and cart-dunging and manuring the same, or *sowing turnips or grass seeds*. And further, &c." So then grass seeds may be sown upon the third crop of corn!!!

There are other covenants, which, as they are liable to objection, ought not to be omitted in this Section of Leases: they are, 1st, a penalty for breaking up pasture; 2dly, a penalty for cutting down timber; and 3dly, permission to sell hay and straw. The first penalty is 10*l.* per acre per annum, for every acre of pasture land converted into tillage. Surely it may happen, and there are many instances which might be pointed out, where it would happen, that a farmer might reap much advantage to himself by breaking up six, seven, ten, or more acres (and these, perhaps, where his landlord would receive most injury), and forfeiting the penalty thus imposed, particularly if at the end of his lease there exist circumstances which render it convenient or necessary for him not to renew his lease. If the question were put, what crops can a farmer grow in such a case, so as to repay himself? I should answer it by relating the following fact, which was stated to me by the bailiff of the gentleman upon whose farm it occurred. This gentleman, eight years ago, broke up a piece of pasture (I think six acres) by paring and burning, and in the first year he sowed oats, in the second wheat, in the third wheat, and in the fourth oats; he then fallowed the land, and in the next spring sowed barley, which he followed by wheat, and this year (1808) oats: except upon the fallow, I

understood

understood no manure was laid, nor was more than one ploughing given to the different crops, and wonderful to relate, the crop of oats *this* year produces *ten quarters per acre*. It is by no means certain, that there are not many acres which a farmer might lett to the growers of woad for two or three years, and then take two or three successive crops of corn immediately before the expiration of his lease, so as to pay himself well for suffering the penalty above mentioned.

The next penalty which has been mentioned as found in leases in Bucks, is that of 10*l.* for every timber tree, or tree likely to become timber, which the tenant shall cut down. Surely such a penalty may be the means of much advantage to a tenant, and of great injury to the landlord, at such a time as the present, when six guineas have been given for the bark of a single tree, and when the timber thus stripped of its bark will sell for 7*l.* 10*s.* per load of 40 feet. It is in vain to argue, that in the lease alluded to, the penalty is 10*l.* *per annum*, because that will not prevent the mischief in the last year of the lease.

The third covenant in leases, or practice by connivance, which has been mentioned as taking place in those parts of Bucks which are nearest to London, is the permission to sell hay and straw, for which it is presumed tenants purchase, and lay upon their land, as much ash muck or manure as will compensate for the loss of that manure which the hay and straw sold would have produced. Granting this to be the case (which is granting too much to an avaricious mind), there is still a great loss not to be remedied, a loss of meat which should arise from the farm, and the treading of stock upon the land, which in some cases is a material point in the management of land. But after all, how is a landlord

.to

to be certain that such a return of manure is made for the loss of hay and straw? What security can he have for the performance of this presumption? and if it is not strictly performed, a person who visits farms where this practice takes place to any extent, will readily see and lament the effect. Besides, by this practice, a farmer is induced to grow more corn than he ought, and to pursue a pernicious course of cropping.

Such covenants as the above, and such connivances, are not likely to produce good farming or honest farmers. The objects which all covenants should never lose sight of, should be to keep the landlord and tenant equally interested in the good management of a farm, so as to produce large crops without impoverishing the soil or filling the land with weeds, and keep good and the most stock possible. It is said, that when a certain Great Personage gave directions for his farm to be shewn to a foreign nobleman who wanted the best information how to manage well a farm, he gave the following order to the person who was to conduct the Nobleman round the farm. "Tell the gentleman to keep his land clean and muck it well." Such a precept was worthy of a good farmer, because such a precept must be the foundation of every good system of husbandry, as well to direct the management of cropping, as to form a judgment of the proper stock to be kept to produce the most manure.

One or two strong instances for the necessity of granting leases, must be mentioned, although the names of the farmers must be suppressed.

One is an instance upon one of the richest lands in Bucks. The farm is all pasture, except a few acres of arable land. In one field of 50 acres more than half of it is covered with ant-hills or banks; the hills are upon
an

an average a yard in length and 21 inches in breadth. No person used to pasture land, can be ignorant how much loss the occupier sustains here. The rent is more than 50s. per acre, and the land is grazed partly by bullocks belonging to the occupier, and partly by agistment stock. Upon enquiring the reason of this state of the land, why the ant-hills were not cut down, or, as the expression is, "why the land was not banked," the answer given by the occupier was, that he has no lease, and the expense of banking would be too great under such a circumstance. I might have confirmed the justness of his plea by the following instance, which is a strong one against improving land without a lease. Not far from Olney, a farmer, whose character is that of being a very honest and industrious man, had banked 40 acres, which in the course of three years cost him 200*l.* he had no lease: just as this improvement was finished, the person of whom he hired his farm, observing (or perhaps informed of) the state into which the farmer had brought the land, sent a surveyor to examine it. The surveyor, deaf to any observations of the farmer, and intent only upon giving the real value, to which the farmer had increased the land, put 9*s.* per acre upon it in addition to the former rent. Add to this the interest of the capital (200*l.*) sunk upon the 40 acres, and a serious lesson is taught every farmer, not to lay out one shilling upon the improvement of an estate without a lease.

Having related these facts, I shall now beg leave to state a case which is very applicable to many farms in Bucks, and calculate what a loss arises in that case, both to the farmer and the landlord, for want of a lease,

A farm

A farm of 250 acres, consisting of 100 of pasture, but all banky land, and 150 of good mowing pasture, lets for 28s. per acre; and so it must have remained, had not an agreement between the parties been made, that a lease should be granted for 14 years, and in the first three, the occupier should expend 250*l*.^{*} in banking and draining; if then, at the end of those three years, the land was worth 40s. per acre to lett, that is, if the occupier had increased the value of the rent 150*l*., from that increased rent the occupier was to be paid, and the remainder was to go to the landlord. *Query*, What additional rent throughout the lease should the landlord receive?

SOLUTION.

By the general rules of calculation, the farmer might have made his 250*l*., in the 11 years, amount, at the end of that time, to (pr^t) where p represents the sum (250*l*.) laid out, r the amount of 1*l*. and its ^{*} interest in one year, viz. 1.05, and t the number of years, 11.

Whence the farmer's 250*l*. would have amounted, in 11 years, to $250*l*. \times 1.05^{11} = \text{£}427.584825$.

But this he is to be paid by the increased rent of 150*l*. per annum.

Now this increased annual rent would, by the rules for finding the amount of annuities, in the same time amount to $\frac{ar^t - a}{r - 1}$, where a represents the annual rent 150*l*., r the same as before, and t the time (11 years).

^{*} If it be asked, how is so much money to be expended? see the case last stated, and further, in Chap. XVIII. the under-draining upon 57½ acres.

† The calculation here made is upon five per cent. interest.

Hence

Hence the amount of the increased rent of 150*l.* per annum would, at the end of the eleven years, amount to $\frac{150 \times \overline{1.05^{11}} - 150}{.05} = \text{£.}2131.0179$; from which accumulated rent, if we deduct the sum to which the occupier's 250*l.* would have amounted in the same time, viz. from $\text{£.}2131.0179$

subtract $\underline{427.584825}$

there remains $\text{£.}1703.433075$, an accumulation of rent by agreement belonging to the landlord. It now then remains to be shewn, what annual rent throughout the 14 years would be an equivalent for this accumulation at the end; call this *s*.

By the rules resorted to, $\frac{r^t - r}{r - 1} = \text{£.}1703.433075$;

from which equation $s = \text{£.}86.965$.

That is, the landlord's additional rent is 86*l.* 18*s.* 3*d.*

In this instance, then, of only 250 acres, (and there are many such), the landlord, had he given no lease, would, in 14 years, have lost the additional annual income of 86*l.* 18*s.* 3*d.*, and the tenant his profit upon that rent.

By this mode of calculating, the farmer not far from Olney, mentioned in this Section, ought to have possessed his forty acres of land without any additional rent, for 16.62 years, *i. e.* little more than 16½ years, in order to have been repaid the sum which he expended.

As this method of estimating the increase of rent which a landlord ought to receive from the improvement of his estate made by his tenant, may be questioned, if not resorted to, I shall state the rules in general terms, from which it is deduced.

A te-

A tenant, upon a lease for (t) years, lays out a certain sum (p) in the time (n), to produce an annual increase of rent (b), and the question is, "What increase (s) of rent the tenant can afford to pay his landlord for the time (t), and yet repay himself by such increased rent the sum he has expended?"

The time in which he has to repay himself is $(t - n)$. Now, the method we take to solve this is, to ascertain what the tenant's money would have produced him at the end of that time, had it been put out to compound interest; and then what the increased annual rent, if forborne, would amount to at the end of the same time. From this sum we subtract the tenant's due, and then find what annual rent during the whole time (t) is equivalent to this remainder.

Now the sum (p) laid out by the tenant would have gained him in the time $(t - n)$, by the common rules of interest pr^{t-n} , where r represents the amount of $l.$, and its interest for one year. The increase (b) of rent, if not paid till the end of the same time $(t - n)$, would become, by the rules for estimating the amount of annuities, $\frac{br^{t-n} - b}{r - 1}$; from which, if we deduct what the tenant's sum laid out would have amounted to, viz.

pr^{t-n} , we shall have a remainder $\frac{br^{t-n} - b}{r - 1} - pr^{t-n}$ which belongs to the landlord: call this sum c ; and now it remains to be asked, what annual increase of rent (s), for the time (t), the tenant ought to pay, instead of this accumulated remainder (c), at the end of the time. By the rules to which we have had recourse $c = \frac{sr^{t-1} - s}{r - 1}$, from which equation $s = \frac{c \times r - 1}{r^{t-1} - 1}$, the
annual

annual additional rent required on account of the improvement.

COR. If it be asked, for what time a tenant ought to possess land, after improvement, before any rent should be required, so that by the improved rent he may repay himself before the landlord receives any part of it.

In that case, put $t - n = m$, and we have $\frac{br^m - b}{r - 1} = pr^m$; whence $r^m = \frac{b}{b - p \times \frac{r - 1}{r}}$, and therefore $m \times \log. \text{ of } r = \log. \text{ of } \frac{b}{b - p \times \frac{r - 1}{r}}$; from which equation we find $m = \frac{\log. \text{ of } \frac{b}{b - p \times \frac{r - 1}{r}}}{\log. \text{ of } r}$, that is, the time m = the logarithm of the fraction $\frac{b}{b - p \times \frac{r - 1}{r}}$, divided by the logarithm of r .

From which expression we found, that the farmer near Olney ought to have possessed his 40 acres for a little more than sixteen years and a half, without any increase of rent.

By these rules we may learn, in any instance, what increase of rent is due to a landlord for any number of years, provided we can learn how much money a tenant expends, and what additional advantage is derived to the land in rent by such expense.

If it be argued that, in such instances as these, the landlord would be paying for the whole of the improvement, and the tenant nothing, but enjoying his share of its advantages—I answer, the tenant has, in laying out his money, risked his own judgment and experience, and will, as tenant, pay the increase of rent which that judgment and experience have produced; whilst the landlord has risked nothing. It is in such instances

instances to the advantage of all parties, that the best farmers should have the management.

Mr. Dodd, of Cheynies, suggests, that it would be better for the country that no farms should be lett for less than 21 years, and that the rent should increase every seven.

It is strange, that after arguing for the sake of Bucks in favour of leases, as well on account of landlords as tenants, it should be necessary to record instances where leases have been refused: but so it is. At Drayton Parslow, after the enclosure, farmers were offered leases, but refused them; pleading, "they durst not engage in leases, until they had tried what the land would do." The same was the case at Weedon, and in other places, which I am allowed to state only in general terms.

SECT. VII.—EXPENSE AND PROFIT.

It is no easy matter for a farmer to keep his own accounts, at least, to state with precision the expenses and profits, so as to speak with accuracy upon questions of nicety, much less can another speak for him. The expenses upon farms must vary with soil, with situation, and with the ability of the farmer, his ability in point of fortune, and in point of understanding; and, to speak in general terms, it cannot be denied but that the profits of farming will not always be commensurate with expenses, but too often in an inverse ratio; that is, farms which require most expense, too often return the least profit—a maxim which indeed marks the difference between bad and good soils. There are, however,

that although six horses may be necessary for 100 acres of land ; yet when you increase to 500 or 600 acres, not more than three horses are necessary to each hundred.

Mr. Forster, a tenant of Lord Carrington's, at Wendover, computes the capital upon farms there to be more than 10*l.* per acre. He says also, five horses are necessary to every 100 acres ; but Mr. Croxford, Lord Carrington's steward there, says, the farmers use six horses upon every 100 acres. Mr. Forster says, the expenses are not less than 6*l.* per acre ; and that the expenses of carrying out manure, and bringing home the crop at harvest, are together equal to what *all* the expenses ought to be. The hills are high and long, and Mr. Forster's house is in the town of Wendover.

Mr. Pope, of Chesham, computes the capital necessary for a farm in that neighbourhood, to be not less than 10*l.* per acre.

Mr. Davis, of Cheynies, the same.

At Buckland, the capital is 7*l.* 10*s.* per acre. Farms here require six horses for 200 acres in the winter, and seven for the summer : the ploughing is done by five horses *at length*.

Mr. King computes the farmer's capital at Whaddon, to be not more than 6*l.* per acre.

One of Lord Chesterfield's tenants, at Wing, says, the capital there necessary for arable land is 9*l.* per acre ; but that pasture and dairy farms require more. I know not how he can make this appear, when he allows only two cows to five acres, and upon arable land four horses to 90 acres, or twelve to 300 acres.

At Dorton, the average capital upon the dairy-farms is 700*l.* to 1000 acres ; and the expenses, 1*l.* per acre.

Mr. Turvey, at Brickhill, thinks farms in that neighbourhood

bourhood require capitals of 12*l.* to an acre; and he estimates the expenses at 6*l.* per acre.

Mr. Smith, of Aylesbury, farms 300 acres under Lord Carrington, of which half is ploughed, and a part of the tithe farm. He keeps nine horses; and he says, the labour of his farm amounts to 300*l.* per annum.

One very heavy and alarming expense in this county, is that of horses. Ploughing costs no where less than 12*s.* per acre, except at the Brickhills. The general method is, to use five horses in a plough at length, with a driver and a ploughman; and this expense is increased, upon some farms, by the continual cropping of the land, and thus requiring an increase of tillage and of horses.

It would not only be highly gratifying to my own personal feelings, but extremely interesting to the cause in which I am engaged, if I had met with such accounts so fairly kept, of the different methods of farming pursued in Bucks; that a communication of the precise expenses and profits upon different farms in the several methods, could have been made to the Board and the public. Such accounts were not given, and conjecture must not be indulged: were it allowable, the facts already stated are sufficient to shew, that, upon the Chiltern Hills, farmers by industry may succeed, and make moderate profits; upon some of the dairy-farms, they barely exist; upon others, and upon many of the farms of a mixed nature, they have made, and are making, large fortunes: whilst landlords, from supineness, and a jealousy in respect to leases, are losing to themselves large sums, and to the public much marketable commodity.

See Appendix No. VII., No. VIII., and No. IX.,

which are three statements of debtor and creditor, drawn up by Mr. Parkinson for the Board, to shew, by the first and second, the loss attending summer-fallowing ; and by the third, the advantage of ploughing, instead of grazing, 50 acres of rich land. They are given as statements, which it is presumed he received from persons in Bucks, or made from their suggestions.

S Plate VII. p. 432.
Buckingham.



Fig. A.



Fig. B.



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Class no.

CHAP. V.

IMPLEMENTS.

THERE is but a small variety of implements in Bucks, and, except the horse-churns already described, but very few worthy of record. The ploughs generally used, deviate more than any I have seen, from the best principles laid down by writers upon them. Mr. Arbutnot, of Ravenstone, at the end of Mr. Young's 2d vol. of his Tour through England; and Mr. Bailey, in a short Essay upon the Construction of the Plough, published at Newcastle in 1795—have given such rules for its construction as are incontrovertible; and they have both come to this conclusion upon the *sw'ng* or *foot-plough*: that if F (*Fig. A, Plate VII.*) be the point in a horse's shoulder from whence he draws; CQP, the plane upon which he draws; CGF, the line of draught, perpendicular to SH, the inclination of his shoulder; G, the point in the muzzle (called also *copse* and *capstan*, as also *cathead*), in the line CF, from whence the plough is drawn: C, the point or centre of resistance, near the end of the sock or share, draw FP and GQ, or its equal aC, perpendicular to the plane CQP. Then will FP be to PC as GQ or aC to QC, or its equal Ga.

That is, the height of the horse from the point from whence he draws, is to his distance upon the ground from the centre of resistance in the plough, as the

height of the beam from the point (to which the draught is fixed) to its length from that centre, measured parallel to the direction of the plough.

Mr. Arbuthnot supposes the height of the horse's shoulder, FP, to be four feet four inches, *i. e.* 52 inches high : Mr. Bailey, only 48 inches.

We will give the dimensions of different ploughs in these points which seem most essential ; and as Mr. Arbuthnot's supposition, that horses * draw at the height of 52 inches, seems most applicable to Bucks, we will try the ploughs there by his rule, and see whether the length of the beams are concordant with the rule advanced ; and if not, what is the consequence.

Mr. Arbuthnot's rule is :

$$FP : PC :: aC : Ga.$$

$$\text{Or, } 52 : 110.5 :: 16 : 34.$$

Whence, if the height of the point of the capstan, by which the line of draught from C passes perpendicularly to the shoulder of the horse, be 16 inches, the length of the beam, from a point perpendicularly over C to that point in the capstan, must be 34 inches, to give the horse the most advantage in his draught, or in other words, to make the power of draught exerted the least possible.

The first plough of which the dimensions were taken, was at Wing : in this plough, $aC = 1 \text{ ft. } 5 \text{ in. (17 in.)}$, and $Ga = 3 \text{ ft. } 10\frac{1}{2} \text{ in. (46.5 in.)}$.

Now by the rule, $52 \text{ in.} : 110.5 \text{ in.} :: 17 \text{ in.} : 36.125 \text{ in.}$, the length which Ga ought to be.

The plough at Wing, then, has a beam too long by $46.5 \text{ in.} - 36.125 \text{ in.} = 10.375 \text{ in.}$

* See Chap. XIV. Sect. 8.

The next plough was at Water Eaton, in which
 $aC = 1 \text{ ft. } 7 \text{ in. (19 in.)}$, and $Ga = 4 \text{ ft. (48 in.)}$.

By the rule, $52 \text{ in.} : 110.5 \text{ in.} :: 19 \text{ in.} : 40.375 \text{ in.}$

The beam here is too long by 48 in. — $40.375 \text{ in.} = 7.625 \text{ in.}$

At the same place, another plough had a $C = 1 \text{ ft. } 4 \text{ in. (16 in.)}$, and $Ga = 3 \text{ ft. } 6 \text{ in. (42 in.)}$

By the rule, $52 \text{ in.} : 110.5 \text{ in.} :: 16 \text{ in.} : 34 \text{ in.}$

The beam of this is too long by 42 in. — $34 \text{ in.} = 8 \text{ in.}$

Mr. Forster, at Wendover, has a foot-plough in which the horses go a-breast: in this, $aC = 1 \text{ ft. } 6 \text{ in. (18 in.)}$, and $Ga = 4 \text{ feet.}$

By the rule, $52 \text{ in.} : 110.5 \text{ in.} :: 18 \text{ in.} : 38.25 \text{ in.}$

The beam of this is too long by 9.75 or $9\frac{3}{4} \text{ in.}$

At Padbury, a plough had a $C = 1 \text{ ft. } 6 \text{ in. (18 in.)}$, and $Ga = 3 \text{ ft. } 8 \text{ in. (44 in.)}$

By the rule, $52 \text{ in.} : 110.5 \text{ in.} :: 18 \text{ in.} : 38.25 \text{ in.}$

In which the beam is too long by 44 in. — $38.25 \text{ in.} = 5.75 \text{ in. or } 5\frac{3}{4} \text{ in.}$

Between Kreslow and Winslow, a plough measured $aC = 1 \text{ ft. } 6 \text{ in. (18 in.)}$, and $Ga = 3 \text{ ft. } 6 \text{ in. (42 in.)}$.

As before, $52 \text{ in.} : 110.5 \text{ in.} :: 18 \text{ in.} : 38.25 \text{ in.}$

Here the beam was too long by 42 in. — $38.25 \text{ in.} = 3.75 \text{ in.}$; that is, $3\frac{3}{4} \text{ in.}$

At Castlethorpe, in one plough, $aC = 1 \text{ ft. } 4 \text{ in. (16 in.)}$, and $Ga = 3 \text{ ft. } 4 \text{ in. (40 in.)}$.

$52 \text{ in.} : 110.5 \text{ in.} :: 16 \text{ in.} : 34 \text{ in.}$

In which the beam is too long by 40 in. — $34 \text{ in.} = 6 \text{ in.}$

In another, $aC = 1 \text{ ft. } 4 \text{ in. (16 in.)}$, and $Ga = 3 \text{ ft. } 9 \text{ in. (45 in.)}$.

In which the beam is too long by 45 in. — 34 in. = 11 in.

In one of the Rev. Mr. Cautley's Rotherham ploughs at Moulsoe, a C = 1 ft. 6 in. (18 in.), and G a = 9 ft. 10 in. (46 in.).

In which the beam is too long by 46 in. — 38.25 in. = 7.75 in., or $7\frac{1}{4}$ in.

Mr. Cautley has since sent me the dimensions of a Rotherham plough, in which, a C = 18.5 in., and G a = 44 in.

This beam is too long by 4.6875 in. or $4\frac{1}{16}$ in.

At Brickhill, a C = 15 in., and G a = 9 ft. 6 in. (42 in.).

52 in. : 110.5 in. :: 15 in. : 31.875 in.

The beam is too long by 42 in. — 31.875 in. = 9.125 in., or $9\frac{1}{8}$ in.

In most of these cases it is observable, that the beams are too long : the consequence is, the horses are at a greater distance from their work than they ought to be, and thus some effect of their exertion is lost. Let us examine how this effective power varies ; for which purpose, in *Fig. B* (*Plate VII.*), let SH (as in *Fig. A*) represent the inclination of the horse's shoulder ; and as he is obliged to be at a greater distance, O, than in the case where his power of draught is least, viz. at F, when CG F is perpendicular to SH ; the direction of that power will be CG O, forming an acute angle with SH. Let O a, represent the whole power exerted by the horse in that direction, draw a b perpendicular to SH, and we shall have the whole exertion of the horse (which let us call a) to his effective power (which we will call x), as O a to a b ; that is, as radius (r) to the sine (y) of the angle made by the inclination of the

the horse's traces, and by the inclination of his shoulder. Whence $x = \frac{ay}{r}$, now a and r , are invariable in the same horse, and in different horses of the same strength; and therefore x varies as y : that is, the effective power of a horse will be in a direct ratio of the sine of the angle made by the inclination of his traces, with the inclination of his shoulder. Now as the traces are lengthened, this angle is lessened, and so will his effective power be; or, to speak in popular language, the farther he is from his work*, the less effective will be his exertions.

From hence it follows as a corollary, that if four horses of equal strength are attached to a plough, drawing all from the same point—if the two first draw by a line perpendicular to the line of their shoulders, and the two before draw by a line which forms an angle of 30° with the inclination of their shoulders, the effect of the horses before is but one half of the effect of those behind; or the efficient power of each horse before, is but one half of each behind. Add another horse of similar strength before these, and let the angle mentioned above be about $14\frac{1}{2}^\circ$, and the effect of that horse is but one-fourth of the effect of each of the first horses upon the plough.

The above is sufficient to shew, to what a disadvan-

* It will be a confirmation of this truth, to state an experiment made upon my own farm, in the month of October 1808, when my servant was ploughing a wheat-stubble with a Norfolk plough and two horses. The furrow was $9\frac{1}{2}$ inches wide, and $3\frac{1}{2}$ inches deep. When the length of the horses' traces was 10 feet 4 inches from the point of the share to the point upon their shoulders from whence they were drawing, the force exerted upon the point of draught of the plough, or the power of their draught, was only $2\frac{1}{4}$ cwt.; but when the traces were lengthened to 15 feet 6 inches, the force exerted to draw the plough was $8\frac{1}{4}$ cwt.

tage horses draw in a plough, when they work at length, or some before others.

May it not then be reasonable to suppose, that the effect of a third horse might be spared in very many instances, if due care were taken in the make of the ploughs, in which we shall now discover another error in the breasts and throats? for which purpose I give the annexed, as the most prevalent forms of the throats of the ploughs in use in Bucks.

Plate VIII. Fig. 1. If QC represents the beam, let $b a d f h g c$ represent the breast, and $b c g h$ will be the throat of the plough, $b c$ being $7\frac{1}{2}$ in. and straight, and ch 10 in. and straight, and the angle at c 144° , and that of g 152° . The breast consists of flat boards bulging out from d to c , so that the plane $d e f h c$ is inclined to the horizon from the land side of the plough.

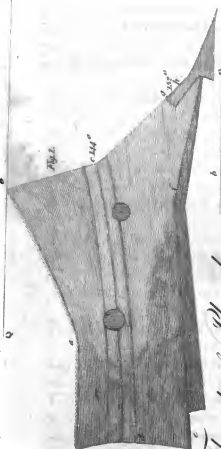
Some throats are of the form annexed (*Plate VIII. Fig 2.*) $G b$ being part of the beam, and c the point of the share, $c n$ parallel to the horizon = 1 ft. no perpendicular to it = $2\frac{1}{4}$ in. and $o b$ = 1 ft. 4 in. consequently the angle $C o b$ = 118° .

The breast consists of flat boards bulging out through the middle of the mould-board.

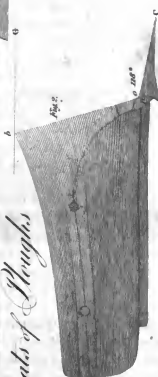
That such mould-boards increase the resistance, and consequently require a greater power of draught on the part of the horse, cannot be denied from theoretical principles, however the nature of soils on account of their tenacity or other causes, may alter and set practice at variance with theory. One circumstance must be noted, because every one who will take the trouble may observe, that it is very common to see a ploughman with his hand upon the left stilt (for these ploughs have all of them two), 18 or 20 inches below the level

of

G



Throats of Ploughs



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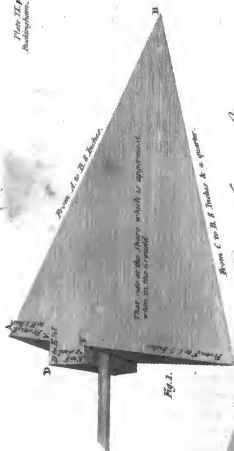


Fig. 1.

Cast Iron Share



Fig. 2.

of his hand upon the right stilt, in order, as it may be presumed, to give the horses the advantage of an inclined plane in the mould-board, which without such an attitude on the part of the ploughman, would not be the case : but the mould-board would have the effect only of pushing the mould aside, not turning it over.

Upon the Chiltern Hills, in the stony lands, there is a variety of shares. In some places they are long iron cones, of about three inches diameter in the base, and a foot long, or more : in others they are long pointed wedges.

The annexed (*Plate IX. Fig. 1.*) are the dimensions of a cast-iron share used at Fawley Court.

Plate IX. Fig. 2. *abc*, is a circular piece of iron five-eighths of an inch in diameter, and standing out from the plane *ACD* $4\frac{1}{2}$ inches, fixed into a projection *cdfg*, at the end of the share, for the purpose of fastening the share to the head of the plough. It stands perpendicular to *AD*, but inclines towards *A* and *D*, so that the distance of *C* from the extremity *ab*, is 5 inches, of *A* from the same extremity, is $4\frac{1}{4}$ inches, and of *D* from the same extremity, is $4\frac{1}{2}$ inches.

The projection *cdfg* is in dimensions from *c* to *g* or *d* to *f*, five-eighths of an inch, and from *d* to *c* or *f* to *g*, three-eighths of an inch.

This appears to be an excellent share for a flinty soil.

To return to the conclusion drawn in page 105, respecting the number of horses in a plough, and to shew the absurdity of the practice in Bucks in this respect, the following facts must be stated.

In no instance in the counties of Norfolk and Suffolk do farmers use more than two horses in a plough, without running the risk of being accounted either fools or madmen.

madmen. The soil in Norfolk certainly is, to speak of it generally, by no means so heavy as that of Bucks; but in both counties, in particular parishes, there are soils of all degrees, from heavy clays to light sands; and in the county of Suffolk there are many acres of heavy clay, and yet no where, nor in any instance, are more than two horses used in a plough.

In different trials to ascertain the power of the draught of horses upon ploughs, at Mr. Coke's, of Holkham, and upon my own farm at Scarning, the variation has been in furrows nine or ten inches wide, and from five to six inches deep, from $2\frac{1}{2}$ cwt. (280 lbs.) to 5 cwt. (560 lbs.), and yet only *two* horses have been used.

In the *Encyclopædia Britannica*, Edinburgh, 1797, it is stated under the word *plough*, No. 22. "One of Small's ploughs worked by two horses, and employed in breaking up stiff land which had been ploughed before winter, and much consolidated by the rain, required a force of 360 lbs. avoirdupois; and we may state this as the ordinary rate of such work: but moderately firm sod under good culture, requires at a medium 320 lbs."

Three trials to ascertain the power by which horses were drawing ploughs in Bucks, were made in November 1808. One upon the farm of the Rev. Mr. Cantley, of Moulsoe, who uses only two horses in the Rotheram plough; one at Mr. Smith's, of Walton, in Aylsbury, who uses five horses in a plough at length; and the third at Lord Carrington's, at Wycombe Abbey. In the first trial, made November 15th, Mr. Cantley and his servant, and a neighbour, were present. It was a wheat stubble: upon one part which had been limed four years ago for turnips, the draught
of

of the two horses to turn a furrow nine inches wide and five inches deep, was $3\frac{1}{4}$ cwt. In the same field, where no lime had been used, the force necessary for a furrow of the same width and depth was 4 cwt. In these instances the two horses were by no means so powerful as the generality of horses in the county, and yet neither Mr. Cautley, nor his servant, nor his neighbour, to whom one of the horses belonged, in anywise intimated a necessity for using more than two horses. Notwithstanding this, the day after, between Newport and Stoke-Goldington, Mr. Cautley and myself saw ploughs at work upon a fine loam, drawn by five horses at length, with ploughmen at their tails and boys to drive the horses.

The second was a trial made at the particular request of Mr. Smith, at Aylesbury, upon a bean stubble, with five horses at length drawing a common foot-plough of the county. The field was a gently ascending slope, and the ploughman was what is called in Bucks, *ridging*, or as it is called in Norfolk, *gathering*; and the furrow was nine inches wide and four inches deep: in the ascent, the force or power of draught of the horses was 5 cwt., and in the descent $4\frac{1}{4}$ cwt. Mr. Smith expressed great astonishment at the absurdity of using so many horses to do that which two ought to be able to do with ease; said he always thought too many horses were kept in the country, and seemed resolved to diminish his number.

The third trial was upon Lord Carrington's farm at Wycombe, in the presence of his Lordship, Daniel Giles, Esq. M. P. for St. Alban's, and Lord Carrington's steward. The plough was a large wheel-plough, drawn by four horses, two a-breast; the furrow was nine inches wide and six inches deep; the force exerted

erted by the horses, or the power of draught, was upwards* 5 cwt., and downwards $4\frac{1}{2}$ cwt.: this was a gently ascending slope, and the ploughman was riding. The next day Lord Carrington's steward had sent only three horses to the same plough: undoubtedly from what has been advanced in this Chapter, one horse more than was necessary. It must not, however, be denied, that it is *possible*, there may be spots of ground in Bucks, and particular instances, where one horse before two a-breast may be necessary in a plough, particularly in the awkward foot-plough generally used: but it is enough to make the heart of a spectator ache, who knows the effect and the absurdity of it, to see five horses at length drawing a plough, and that perhaps upon a rich loam, where the force required is not more than 3 cwt. He cannot but think that in such cases the first horse draws the second, the second the third, the third the fourth, the fourth the fifth, and the fifth the plough, and that in fact the principal part of the draught lies upon the first horse, and that sometimes it is transferred from one to another, so that now one draws, then another, and then another, and so on through the team, whilst the boy walking by their side alarms a sluggish one or two with his whip, and then the plough runs along with the ploughman almost crazed at the tail to keep it in the ground: all the while the horse next the plough, who seldom puts his shoulder to collar except at the end of a *bout*, staggers and reels under the enormous weight produced by the horses before him. Surely such an absurd and expensive mode of ploughing will not long be adhered to by those who will consider, that such five horses in very

* It was an ascending ground.

many instances in the county of Bucks, are not drawing 5 cwt.

It has already been stated, that the plough in general use in the county, is a foot-plough, with a long beam and a breast formed of flat boards bulging out across the breast, somewhat resembling a convex breast. There are also a few others of different forms.

The Earl of Bridgewater, at Ashridge, uses a wheel-plough made by Mr. Plenty, of Southampton, and may be seen at Narrow-wall, Lambeth. The principles of this plough differ but little from the Norfolk: the furrow wheel is higher than the land wheel; the distance of the point of the share from the wheels is 3 feet, and the land side of the plough is closed by a plate of iron. In the Norfolk plough, the wheels are of the same height; the distance of the point of the share from the wheels, is 1 ft. 4 in. at the same pitch, and the land side of the plough is not closed.

At Risborough and elsewhere, the Berkshire wheel-plough is used. The wheels of this plough are 18 in. in diameter, the standard 3 ft. high, the distance of the point of the share at the nearest pitch from the wheels, 2 ft. 4 in., and at the greatest, about 2 ft. 6 in., there being only two holes in the beam to alter the pitch: the height of the beam from the point of the share when at the highest pitch, is 2 ft. 1 in.

Mr. Williams, at Horton, uses a neat one-wheel plough.

R. Greenhill, Esq. at Checquers, uses ploughs with cast-iron breasts, and closed on the land side.

Norfolk and Suffolk ploughs have been used in different places, but are now laid aside.

H. H. Hoare, Esq. at Wavendon, uses the Scotch plough,

plough, with cast-iron concave breasts, and his ploughman says they *scour* better than wooden breasts. He uses also only two horses, whilst some of his neighbours use five at length.

The Rev. Mr. Cantley, of Moulsoe, uses the Rotherham plough with two horses.

The Rev. Dr. Drake, makes the following observation upon implements: "I have seen various kinds of ploughs brought from different counties, but they are seldom long persevered in."

Mr. Brown, of Thorn, near Chesham, though a Norfolk man, and used to the Norfolk and Suffolk ploughs, has now only the plough of the country.

Mr. Forster, of Wendover, for a long time used the Norfolk plough, but now has only the ploughs of the county. He says, "the Norfolk plough would answer well upon all parts of the Chiltern Hills."

S. Freeman, Esq. at Fawley Court, "has for several years employed the swing-plough (meaning the Scotch plough), drawn by two horses, which is used indiscriminately upon all kinds of soil, however irregular the surface; and Mr. Forster, his steward, who was a Northumberland farmer, has no hesitation in saying, that more in quantity, and much better work, is performed by this plough, than by the cumbersome machine generally made use of, drawn by four heavy horses and driven by a stout boy. Mr. Forster adds, "that the farmers in the neighbourhood are beginning to be sensible of the advantage of the swing-plough, and are adopting it." Mr. Freeman has a blacksmith's shop in his own yard.

James Praed, Esq. at Tyringham, has used the Suffolk plough, but is obliged to abandon it principally

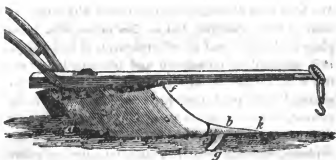
as

as his bailiff, Mr. Leeds, alledges, because the blacksmiths there are unable to repair the shares, and do such work to it as is necessary. *Hinc illæ lachrymæ.* We have here discovered the true reason why improvement so little in degree, and so slow in progress, takes place in the form and use of implements of husbandry. It is intrusted to ploughmen and blacksmiths, or rather it is subject to their controul; and no one acquainted with rural concerns wants experience to be assured, that such men will in all instances endeavour to frustrate plans which seem to diminish the farmer's expenses, and particularly in such instances as relate to a diminution of servants, or of such practices as serve them by being persevered in, or give them trouble if laid aside. If a boy is not employed to drive the horses at plough, the ploughman must drive them with reins: this is new to him, he is awkward at it, and at his time of life is unwilling to learn, particularly when he finds he is singular, and setting an example of reformation in his neighbourhood; an idea totally repugnant to an uncivilized and untutored mind, and difficult to be admitted by persons of the description we are contemplating. And as to the artisan, if two horses may be used in a plough instead of five, his work of shoeing will be diminished; and should new ploughs be introduced, he must learn his trade anew, or oblige his employer to revert to the use of the old implement: facts shew which alternative takes place.

Double Ploughs—Are used but in few places. At Lee, near Wendover, Mr. Lovett uses them, and at Moulsoe, some of Lord Carrington's tenants.

Double-breasted Ploughs—Are still fewer. Mr.
BUCKS.] I Forster

Forster uses one for purposes described in this work ; of which the following is a representation.



a m f b, is a flat breast.

a b, is 2 ft. 6 in.

b k, the point of the share, is 1 ft. long, 2 in. broad at *b*, and brought to a point at *k*.

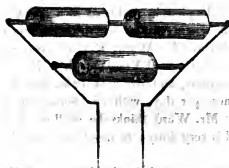
The two wings, of which *b g* is one, are each 1 ft. long and 2 in. broad : the point *g* is 8 in. perpendicularly distant from *a b*.

Rollers—Are much wanted in this county for the pastures. Indeed, it would be advantageous to landlords in some instances, to find them at their own expense, and oblige their tenants to use them, to prevent the effects of ants.

The Earl of Bridgewater has a cast-iron roller drawn by six oxen, four a-breast. Its weight without the shafts is 2 tons 17 cwt.

Mr. Watts, of Hanslope, uses three rollers at a time, placed in a form somewhat similar to the following :

Scarifiers



Scarifiers—Are used upon farms in the south parts of Bucks, and round the eastern part to the north. T. Sheppard, Esq. of Thornton, uses them to much advantage.

Between Wycombe and Marlow, a scythe of this form is used upon one farm: *a b* being the scythe, *b c* the handle, and *e d f g*, being two wooden forks parallel to the outside edge of the scythe.

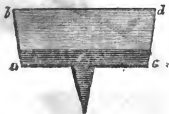


Drills.—Except the single and double barrow drills attached to the plough, and used in a few places for wheat, and in many for beans, drills are very uncommon in Bucks. R. Ward, Esq. of Heyde Lodge, near Chesham, has used Youll's drill, of Holborn. It has five coulter, and drills at 12 in. and 9 in. and works $1\frac{1}{2}$ acre per day, with one horse: the price of it was 7*l*. Mr. Ward thinks he shall use it no more, as his land is very flinty: he uses Cook's scarifier and loes.

Mr. Parrott, steward to the Marquis of Buckingham, uses Cook's drill, and thinks it advisable that every farmer should do the same.

Mr. Forster uses a drill invented by himself for sowing turnips. (*See Plate X.*) It is a small tub upon an axle, to which two handles are fixed. The tub has one head, *a b c*, 2 ft. in diameter, and the other, *d e f*, only 1 ft. and the side of the tub from one head, *a b c*, to the other, *d e f*, that is, in *Fig. 3*, *d a* is 9 in.: within 3 in. of the large head, are holes in the side of the tub, through which the seed falls; *g h*, *k m*, are two handles. *Figs. 1* and *2*, are two end views; and *Fig. 3*, is a side view of the drill.

Horse-hoe.—*Plate X. Fig. 4*, is a horse-hoe for beans. This hoe, *a b d c*, having *b d* 1 ft. 2 in. and *c d* 6 in. has sometimes a pointed piece of iron, or kind of share, in its middle, thus:



The

Fig. 4.

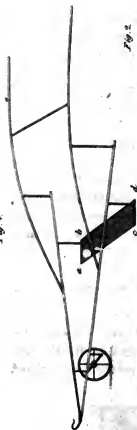


Fig. 3.



Fig. 2.

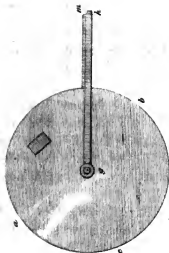


Fig. 1.

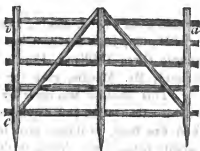


Drill for Sowing Turnips.

Published Jan^y 2^d 1830 by R. Phillips, New Bridge Street London.

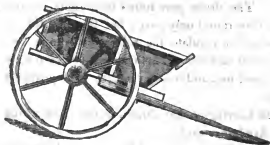
116

The following hurdle is cheap and light : it is made of split ash, 2 in. in diameter, and tied to stakes. It is here laid down half an inch to a foot : *a b* is 6 ft. and *b c* is 3 ft.



At Cheynies, such hurdles are made 9 ft. long.

Cart.—A side view of the outline of the cart in general use in Bucks, laid down by half an inch to a foot.



Waggon.—The waggon are made straight, so that the wheels before do not *lock* into the carriage, as in the Norfolk and Suffolk waggon : the consequence is, the wheels before are higher, which is an advantage with respect to draught, but rather dangerous for active drivers.

A farmer near Chesham, brought a waggon from
13 Suffolk,

Suffolk, but was obliged to lay it aside, because his labourers were unable to load it.

Churns—Have been described in Chap. III. Sect. 2.

Thrashing-Machines—Are becoming more common every day. At Ilorton, is an excellent but expensive one, belonging to Owen Williams, Esq. in whose absence his steward, Mr. Mackie, gave the following account of it. This machine was made by Mr. Rennie: it cost not less than 400*l.* and requires six horses, four men, and five boys, to thrash three loads, *i. e.* 15 qrs. of wheat, between six o'clock in the morning and two in the afternoon: of barley, oats, pease, or beans, it thrashes one load in an hour.

If the horses move at the rate of two miles and an half an hour, the drum of this machine goes round 375 times in a minute, and having six beaters, strikes 2250 times. The drum goes round three times, whilst the rollers turn round only once; but there are three different wheels to regulate the rollers, so as to make them turn slower or faster. This machine has been six years in constant use, and has never been in any respect out of order.

Lord Carrington has thrashing-machines which require five horses each.

At Ashridge, the Earl of Bridgewater has a thrashing-machine which is worked by three asses: the price was 80 guineas. It will thrash 10 qrs. of wheat per day: the rollers are not fluted, and the straw is less broken on that account.

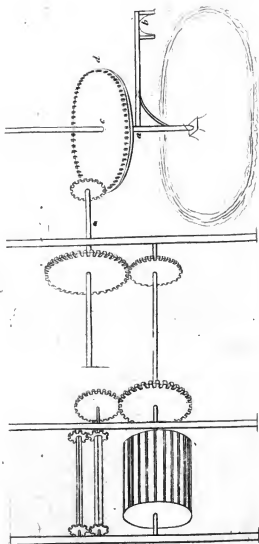
Strickland Freeman, Esq. of Fawley Court, is erecting a very large one, to which is attached a machine for cutting chaff, and a mill for grinding corn.

The



Plate VI p. 110
Buckingham

Threshing Machine.



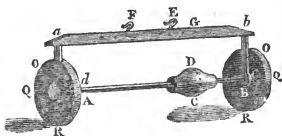
Published April 22nd 1844 by J. Phillips & Son Bridge Street London.

The Rev. Mr. Cautley's thrashing-machine requires two horses.

The least expensive, and withal, best calculated for farms in Bucks, is at Mr. Kitelee's, of Castlithorpe: the price of it is 50*l*. and requires only one horse, three men, and a boy, to thrash from 5.qrs. to 7.qrs. of wheat in a day. It was made by Mr. Frost, of Linford, in this county. The outline (*See Plate XI.*) may serve to shew its movements.

The lever *a b*, to which the horse is yoked at *b*, is 12 ft. long; and the wheel *c d* over it, has a diameter of 12 ft.: the drum consists of a great many beaters projecting about an inch.

As I shall have occasion to mention my own turnip sowing engine, I will describe it.



A B is an iron rod not three-fourths of an inch thick, and 4 ft. long, fastened into two wheels, *O Q R*, at each end, about 14 in. diameter; *a b c d* is another iron rod, *a b* is distant from *A B* about 9 in. hangs upon the two handles of the plough by *E* and *F*, and thus draws the rod *A B*, which moves in rings fastened to *a b* by the arms *b c a d*. *C D* is a tin box through which the rod *A B* passes by a tin ring through the box, and by which it is set fast upon the rod. This

box has a small slip door into which the seed is put, and as the box turns with the iron rod after the plough, it drops the seed in a straight line by the holes C D. A brush is fastened at G, so as to cover the holes C D, to prevent them from being filled with dirt thrown up by the wheels, or otherwise adhering so as to close them. The price of this turnip sower does not exceed 7s. 6d.

CHAP. VI.

ENCLOSING.

ENCLOSING has within a few years made rapid strides, and the effect has in all cases in Bucks been so great, that it is rather a circumstance* of surprize that there should be so many acres of land still in the open-field state. This effect may in general terms be stated to be a benefit to the farmer, the landlord, the lord of the manor, the church, and the public, by improvement in cultivating, cropping, and stocking; by increasing of rents, substituting an equivalent for tithes, which increases with the value of land, and leaves the parson independent of his parishioners, and free from a possibility of litigation and strife; and by bringing into the market a much larger supply of corn and food, and increasing the population, except where steps are taken to counteract it.

The cases of enclosure which have taken place in Bucks, have been stated to the Board, and have already appeared in their General Report upon that subject.

At Weedon, near Aylesbury, lands in the unenclosed state used to lett for 10*s.* per acre, and subject to tithes. One farm was pointed out, which is increased to 27*s.*

* See more upon the necessity of Enclosing, under the article, Obstacles to Improvement.

per acre : it consists of 302 acres 3 roods 20 poles, and lets for 422*l.* 5*s.* tithe free.

The general effect in the neighbourhood of Olney, is said to be, that rents are raised in some cases three times as much as they were before.

At Newport Pagnel, 900 acres have been enclosed within a few years, and the rent of land has risen to 2*l.* per acre, and an improved system of cultivation is introduced.

Mr. Smith, of Thornton, says, that in general, enclosing has more than doubled the rents, and at Thornborough has trebled them : and in all cases there is much more food from pastures, much more corn from arable land, and a larger population.

In the neighbourhood of Castlethorpe, rents in enclosures are doubled : not more corn is grown, but more stock is kept, more sheep, and more cows, but population has decreased. Not so at Hanslope ; there population increases rapidly.

Near Buckingham, before enclosing, lands in the open-field state were lett from 10*s.* to 15*s.* per acre : now they lett for 30*s.* per acre.

At Wendover, rents have risen from 14*s.* to 1*l.* per acre : besides that the lands are better laid together for the convenience of farms. An instance occurred there in the open-field state, where 18 acres of land were dispersed in 31 pieces detached from each other.

At Horton, rents before enclosing used to be from 16*s.* to 18*s.* per acre ; now they are risen to an average of 45*s.* per acre ; and much land, which used to be flooded during the winter, and upon which many crops of wheat were destroyed from the same cause in the summer, is now made sound and very productive. (See Appendix, No. X.)

SECT. I.—FENCES,

ARE of two sorts, old and new. The old fences consist chiefly of a mixture of ash, willow, and hazel, with some whitethorn, with but few and shallow ditches: the fences are generally allowed to grow to a great height, and then serve to make hurdles* (called in some counties *lifts*), and as fuel for fire. They are cut down about once in twelve years, and then are plashed in the manner described by Mr. Young in his Survey of Hertfordshire. The new fences consist of whitethorn, laid in two rows at but a very little above the surface of the ground, with ditches 3 ft. wide upon top, from 18 in. to 2 ft. deep, and 1 ft. wide at the bottom: to preserve them, rows of posts and double rails are placed, one at the back of the whitethorn and the other upon the brow of the ditch on the other side. Such fences, unassisted as they are by not being raised so high above the surface as to be out of the reach of the weeds and rubbish which grow generally between the raised mould and the surface, and by not having a ditch before them of sufficient depth to preserve the whitethorn from being surfeited with water, and consequently overrun with moss, have in a great many places grown luxuriantly, and become complete protections against stock of all kinds and sizes.

At Moulsoe, the new fences, including the *ditching*, of the width and depth mentioned above, the *quickening* (*i. e.* putting in the whitethorn), and *mounding* (*i. e.* protecting the whitethorn), with double rows of

* See page 117

posts and rails, was done for two guineas per acre, of 4 rods, reckoning $5\frac{1}{2}$ yards to a rod.

The expense was nearly the same in all other instances upon new enclosures, and therefore need not be repeated. Indeed they were, many of them, undertaken by one person at Aylesbury, who finds labourers, whitethorn, posts and rails, and who agrees within a certain time to raise such fences as shall no longer require posts and rails to protect them than for that certain time, at the end of which time he removes such of the posts and rails as remain.

Mr. Forster, of Wendover, thinks, if tenants were allowed to do the fencing in case of enclosures, that the fences would in general be better. He shewed an instance of fencing managed by himself, where the whitethorn grows well upon the Chiltern Hills, and far exceeds some fences very near it, done by the undertaker employed by the commissioners or their solicitor. In Mr. Forster's fence he put in fresh mould, which he carried from other places. The undertaker used only the mould upon the spot, nothing but calcareous earth.

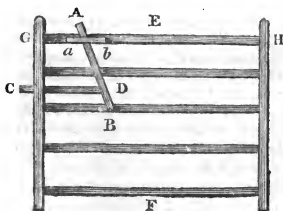
Mr. Bailey, bailiff to Dr. De Salis, at Wing, made the same observation upon the fences there, and pointed out their defect, which was very manifest, so that in the fences which were made across ridges, which in the open-field state were raised very high in the crowns, the fences are very distinctly to be seen worse where the crowns were than where the furrows were. Mr. Bailey has himself raised a fence just behind that now alluded to, which is growing very luxuriantly and without such defect.

Mr. Smith, of Walton, in Aylesbury, further pointed out, that it would be still more convenient, if
upon

upon enclosures the whole of the land allotted to the same farm, were allowed to be divided as well as fenced by the farmer only.

Sir John Dashwood King, of Halton, confirmed the reasonableness of Mr. Forster's observation, by shewing the difficulty which exists of procuring good white-thorn fences just upon the top of the Chiltern Hills. This arises from the shallowness of the soil upon the chalk, which can be corrected only by the plan adopted by Mr. Forster. Sir John also mentioned a circumstance relating to the cultivation of furze, for which it is difficult to account, viz. that furze, or whin, or gorse, in the Vale of Halton, will grow well upon flag, whilst upon tempered land it is almost impossible to raise a single plant.

Gates.—Except the three gates mentioned in Chap. III. Sect. 2, there is nothing singular in the common gate of this county. The latch by which the gate shuts is usually made of wood, thus :



In

In the gate E F, A B is a wooden piece of rail moveable upon B, and confined to the side of the ledge G H, in a groove *a b*; to A B is fastened another piece of rail, C D, at D, and passing through the head of the gate at C, this catches against a piece of wood fixed into the post. By moving A towards E H, the gate is opened.



SECT. II.—NEW FARMS,

ARE not numerous in Bucks. Much care is necessary in laying them out, both with respect to the size of the fields, and their position with respect to each other and to the farm-yard. Lord Carrington has some at Moulsoe, but neither in these nor in any others, were there any circumstances of notoriety to be pointed out.

CHAP. VII.

ARABLE LAND.

SECT. I.—TILLAGE.

IT is a strange prejudice which pervades this county, that no plough can be used without three, four, and in some cases seven horses*, with a driver besides the ploughman, and yet it is by no means an uncommon concession, that two horses would do the work very well except at the first breaking up of a sward. Upon enquiring the reason of this practice, one man tells you that his horses have nothing else to do, and they may as well be in the plough as not. Such was the reason given by a ploughman in the open field at Risborough, where the soil is light, and is farmed by Mr. Grace of that place. Another, that he could do all the ploughing of his farm with a pair of horses a-breast, after the Norfolk and Suffolk fashion, but that he cannot find labourers to comply with it: this was the case with Mr. Forster, at Wendover, who was himself a Norfolk man, and has relations in that county; and the same with Mr. Shickle, bailiff to J. Ayton, Esq. of Missenden. This man was hired by Mr. Ayton expressly for the purpose of introducing

* See the Chap. upon Implements.

the Norfolk farming and the Norfolk husbandry, and particularly the Norfolk tillage, by two horses a-breast in a plough, which he steadily pursued for some time, and still declares, that not more than two horses in the Norfolk plough are necessary for the work of Mr. Ayton's farm; but notwithstanding this declaration, it was with much reluctance I was obliged to note upon Mr. Ayton's farm in the same field, and upon the last earth for sowing turnips, two ploughs, having each three horses, a ploughman, and a driver, when the land was in fine order and a fine tilth. The reason given was too frivolous to be mentioned here. There was, however, one point of tillage observed by this man, which, as it differs from the generality of his neighbours, must not be omitted in this place, which is, that whenever he breaks up a sward or foul land, he takes as shallow a furrow as possible; by this practice he says he can clean his land well, and without difficulty make a good fallow; whilst those who break up such land with a deep furrow, find it very difficult to clean their land at all, and are obliged in some cases to use six and seven horses, and even so are much distressed. In this man's husbandry is seen a striking difference from what is prevalent in the country, both with respect to the first, and subsequent stages in the management of a fallow. He has the plough, the harrow, and the roll, at work all at the same time in a field, if necessary, that is, if it is required to clean the land and reduce it to a fine tilth, according to the practice pursued in Norfolk; whereas the most prevalent mode of tillage in Bucks, is to break up the land intended for a fallow (in some instances where I measured the depth of the furrows), five and six inches deep, and too often late in the spring

spring, instead of the November preceding. This ploughing, in one of the instances now alluded to, remained untouched upon the 20th of June, and the soil being very clayey, the furrows were so closely united, that it is not wonderful if it required two teams of-horses to plough it the second time, particularly as the farmer was resolved to plough it across (*overwart* as it is termed), when it should seem that after such an error in the depth of the first ploughing, the only means of correcting the fault would have been to have ploughed it the same way as at first, viz. lengthways, particularly as the plough in common use is formed with very little advantage from mechanical principles to facilitate the work. This error is not so common upon the Chiltern Hills, where turnips are grown. But even there, as well as all other parts of Bucks, the harrows are very sparingly used upon the fallows, whether they be fallows for turnips or fallows for corn. It is a very rare sight indeed, to find harrows and ploughs at work at the same time even upon tilths for turnips.

The practice is to plough the whole field throughout, and after that to harrow, if it is judged proper to use the harrows at all. In this practice no attention is paid to the state of the land, whether it is not cloddy, and whether the clods will not be so dry if harrowing be delayed till after the ploughing is finished, that the harrows can have no effect upon it. But custom directs as well with respect to the time and mode of ploughing, as of harrowing. This custom, perhaps, had its origin in the management of the open-fields before enclosing, where it is now the practice to be continually ploughing the same way, turning the furrows first from the crowns of the ridges, called *casting* (in Norfolk *splitting*), and then to the crowns, called
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K
ridging

ridging (in Norfolk *gathering*), without using the harrows at all until the seed is sown, and without any cross-ploughing (or, as it is called in Norfolk, ploughing *overwart*, and sometimes simply *warting*).

Mr. Forster, of Wendover, thin's the practice of breaking up land to be fallowed so deep as five or six inches, a great error, and that the tillage would be much improved by two-furrowing, which is imitating (what is called in a garden) *trenching*. This method of tillage is adopted in some cases upon the Chiltern Hills, but not upon the heavy lands in Bucks.

Between Wendover and Missenden, a farmer was cross-ploughing an oat stubble on the 25th of April, 1808, which had been ploughed once lengthways, and yet he was obliged to use six horses a-breast. Upon examining the cause why two horses were added, when only four were the general number, I discovered that the first ploughing had been five or six inches deep, and that the land was now too wet to be ploughed at all. No good practical farmer would attempt to clean land by ploughing when it is wet, nor would he cross-plough in such an instance as this; he would wait till the land be sufficiently dry, and then, as it was ploughed so deep in the first instance, would plough it back again, and harrow it well, before he attempted to cross-plough it at all. This was an oat stubble after a crop of wheat, and preparing as a fallow for turnips.

At Whaddon, the bean-stubbles to be fallowed for wheat are not broken up before April or May, and then with as deep a furrow as possible. It was an observation made by some farmers themselves in Bucks, that it is too much the practice to begin the different ploughings at fixed or stated periods, without any reference to season, soil, or any agricultural propriety.

From

From hence, one cause is to be deduced for using so many horses in a plough.

In the tillage of open-fields, with which the eye of the beholder is continually distressed on account of the great waste of land in the mere balks, the irregularity in ploughing, and the height of the middle or crowns of the ridges (called in Suffolk *stitches*, and in Norfolk sometimes *warps*), raised very often more than 2 ft. above the level of the furrows between them, little can be done as to correction. The rights of commonage over the balks for sheep or other stock, causes the first; the irregularity of the ridges in breadth and length, the second; and the means of getting rid of the water, which individuals possess only by upturning their ridges, the third. These are evils which only enclosing can correct, and if they existed only upon lands under open-field culture, no notice would be taken of them in this place; but that is not the case. Many fields may be pointed out, where the ridges still lie in some such forms as the following:

Fig. 1.

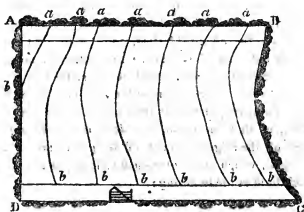
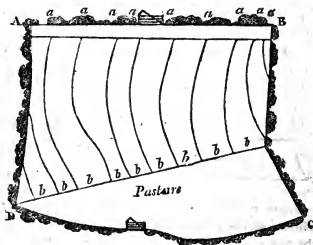
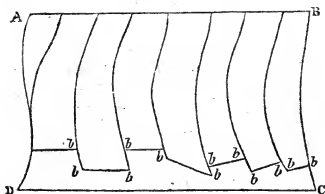


Fig. 2.

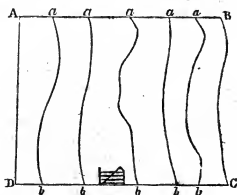


Where A B C D represent enclosures, *a b, a b, &c.* furrows dividing them into ridges irregular in their breadths, and neither straight nor parallel to each other, but raised in their crowns. At the ends are large borders, through which sometimes these furrows are carried. At the bottom of Fig. 2, is a headland left in pasture, of about three-fourths of an acre, which was so in the open-field state, and has been so continued, but why it should be so continued, no good reason can be assigned. In these cases, the farmer has it not in his power to argue the want of a lease. The only improvement made in these instances since the open state, is, that the line *b, b, b, &c.* which bounds the ends of the ridges, and cuts off the grass headland, is straight, which in the open-field state appears in some such form as the following :

I must

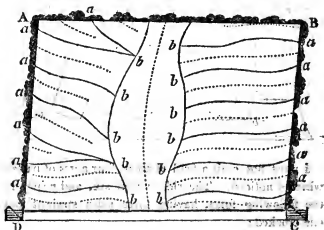


I must not omit a field of about four acres of barley which I noticed. The ridges were six, and nearly in the following form, having three sides straight and one crooked :



The furrows between the ridges were full of may-weed, docks, and all kinds of rubbish, and wasted two yards of ground between each stitch, by measurement.

The following is another instance in an enclosed field, of the irregularity of ridges under consideration, and the consequent bad tillage which must ensue.



a b, a b, a b, &c. shew the furrows between the ridges, and the dotted lines point out the tops or crowns of the ridges. *CD* is a road through the field.

This irregularity in laying out the ridges, in fields which have been enclosed long enough to have been corrected, is not so rare as to render it necessary to point out the particular places where it prevails. It is not found upon the Chiltern Hills nor in the south part of Bucks. There are, however, to be found there in many places, large borders of grass round the fields. Such borders, if they are kept clear of weeds, are said to serve a good purpose where the hedges are high, the land heavy, or where drifts of stock must pass: because where large hedges and trees abound, the tillage under them is lost, no corn grows, or if any, it is of an inferior kind; and when land is heavy, carting upon it *pouches* it so much, that every wheel-rut is seen in the

the succeeding crop. Borders of this sort therefore afford the means of carrying off part of a turnip crop without injury to the land, and are a warm and dry resting place for sheep, when they have filled themselves with turnips; and from the manure of sheep and a constant renovation of mould by the plough turning upon them, they afford good hay. Mr. Lovell, of Lee, near Wendover, argues thus in their favour.

Some farmers argue against them, alledging, that they serve as a harbour for insects, vermin, and all kinds of enemies to corn.

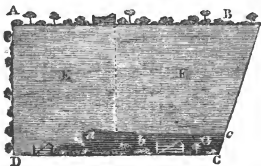
It seems, however, to argue much in their favour, when care and design are shewn, as upon Mr. Lovell's farm. It was by no means a pleasant circumstance, to be obliged to note irregularity in this respect upon a farm, which in other respects is as well managed as can be expected in a neighbourhood where the culture of arable land is not so well understood as in other districts. It was in a field, part of which was a clover ley, and the other part *olland* (*i. e.* *old land* or *sward*), which the farmer was breaking up for wheat. I believe the whole field measured twelve or fourteen acres. On one side is a gravel-pit, which is not deep, but covers probably one-fourth of an acre: within twelve or fourteen yards of the gravel-pit, is a fence and a ditch, into which the water standing in the gravel-pit ought to empty itself, if the ditch were deep enough; instead of which, it runs by a small ditch cut parallel to the fence, and at about seventeen yards from it, down to the farthest part of the field, leaving a very large uncultivated border.

In explanation, take the following diagram, which,

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although

although it is not an accurate delineation of it taken by a chain, yet will sufficiently point out the fact.



E is the clover ley, F is the olland.

a is the gravel-pit.

D C the fence and ditch into which the water should flow.

b c is the ditch by which the water does flow.

And G is the waste of land.

After this statement of the form of many enclosed fields still in the fashion of open-fields, and particularly of (what has effect upon the tillage) the great irregularity of the ridges in them, some observations are necessary. No doubt can exist, but that the tillage of such lands as have now been described, is attended with great loss to the occupier. In the first instance, there is a great loss of time on account of so many short furrows (or, as they are called in Norfolk, *skewts**),

* The origin of this word I take to be from the word *askew*, because at such furrows as are called *skewts*, you look *askew*. A friend suggests, that it is a corruption of *acute*, because the tillage is performed by furrows forming *acute* angles with the side of a field. I am, however, inclined to think a *furrow askew* is more analogous to the language of a ploughman than *angles acute*.

the

the ridges being seldom of exactly the same breadth from one end to the other throughout: some being wider at one end than the other, others wider at the ends than in the middle, and others wider in the middle than at the ends, and so on. Another loss in tillage arises from the want of cross-ploughing, by which circumstance much undersoil is prevented from being exposed as it ought, to the influence of the air, sun, and frosts; to which may be added, the necessity urged on that account of driving horses at length in a plough, the absurdity* of which cannot be doubted. The next loss I shall mention is in the furrows, which is twofold: one caused by the great depth of the furrows below the crowns of the ridges, and the other by their deviations from straight lines. In the former case the water stands so much in the furrows, that it not only often destroys all vegetation in the corn and grasses intended to be cultivated, for two yards on each side of them, but encourages the growth of all kinds of weeds† and rubbish. As many ridges therefore as there are of this sort in a field, twice so many yards of corn will be destroyed, or at least the tillage rendered of no effect, unless, as was the case in a field at Hillesden preparing for wheat, much more labour is expended upon the furrows than upon the crowns, and even so the evil may not be cured. With respect to the last mentioned circumstance, it is not an easy task to convince every ploughman, that there is any loss arising from the circuitous form of the furrows: every farmer, however, who has ever reflected at all,

* See the Chap. on Implements.

† See the case produced in the Chapter of Barley, in a four acre piece.

knows that the shortest line between any two points, is the soonest traversed by his horses and labourers, and that the less of time they spend in performing a given work, the less is his loss. He knows also, that the less the land is, which is consumed in waste or to a bad purpose, the greater his gain, and therefore will conclude, that circuitous furrows between ridges, render tillage more expensive. It is a doubt, whether to these losses arising from the tillage of lands railed in the crowns of the ridges, as many are in Bucks, another may not be added, of great importance in the wheat crop*, arising from mildew. Taking all these losses into consideration, there can be but one substantial cause which prevents so many of the present high ridges from being reduced to such a level as shall prevent such losses, and render the tillage of land in Bucks as slighty as the best tillage in the island, and that must be the want of leases. Leases on the part of the farmer, to enable him to do it, and on the part of the landlord, to oblige such practice to be pursued. For no doubt exists in my mind, but if it were possible to make a correct estimate of these losses, and fix their annual value, they would be found far greater than that sum would pay, which it would be necessary to expend to balance such losses, and derive such advantages as cannot exist upon the old system. Could such a fair estimate be laid before the public, much would be due to him who should be the author of it, and it would answer well to the public to repay him for his labour. It was not with a small degree of pleasure I saw this practice pursuing by two gentlemen already

* See the account in the Chap. upon Wheat.

mentioned,

mentioned, H. H. Hoare, Esq. at Wavendon, and the Rev. R. Cautley, at Moulsoe. Mr. Cautley has within five years brought two-thirds of his farm to the desired level, so that he can now draw the ridges straight, and lay them into such forms and breadths as he thinks best adapted to the plant he means to cultivate. He can now use the scarifier and the drill, and produce better crops than can be found upon the old system of management. His farm does credit to his exertions. He does, moreover, use only two horses in a plough.

H. H. Hoare, Esq. sensible of the great loss in tillage attending the forms of the ridges in their open-field state, disgusted with their unsightly appearance, and resolved to surmount the obstacle they presented to the attempts he wished to make to introduce better cultivation, different cropping, and farming according to the modern improved systems, has within a short time reduced the lands upon his farm to a level, so that he can now put them into whatever forms he pleases. Mr. Hoare has diverted the water from its original channels (the furrows), by drainage, with the mole-plough and with under-drains, and in his tillage has used lime to fertilize the steril soils, and can now, notwithstanding the stiffness and tenacity of many parts of his farm, perform all his tillage by the Scotch plough drawn by only *two* horses a-breast, whilst in a field ploughing for wheat on the opposite side of the road, his neighbour was using in November last, *five* horses at length. Can it be doubted but that Mr. Hoare's diminution of the number of horses will repay him all his expenses?

It is with great satisfaction such exertions as these are beheld, in a country where farmers dread the thoughts of deviating from the practices of centuries past,

past, and where they will be bold enough to assert, that to put the land out of its former tillage, will ruin every crop attempted to be grown. Such assertions are idle. No doubt it would be highly imprudent to endeavour in *one* crop and in *one* year (by ploughing only), upon such a soil as that of Bucks (a clay), to level the ridges, and without under-draining, or some kind of draining, to divert the water from its original course by the furrows between the ridges. Without care, without a gradual exposure of the subsoil upon the crowns of the ridges to the effect of the winter's frost, sun, and air, so tenacious a soil as that in Bucks would produce no crops, for by levelling hastily, a steril soil would be turned up from the crowns, and the most fertile be buried in the furrows, and by omitting to drain properly, the water running in its former channel, would poison their fertility; and to speak the truth, this does in some measure slightly appear in one or two instances upon Mr. Hoare's farm, particularly in a crop of Swedish turnips, notwithstanding they are cultivated by the Northumberland plan, and upon some clover leys, on account of his desire to bring the land to a level sooner than was prudent; but these instances are too trivial to be mentioned, in comparison with the advantages to be derived from the practice, properly and carefully performed. Upon Mr. Cautley's farm no such imperfections are to be discovered. Mr. Hoare will correct his by giving the old crowns an extraordinary winter's ploughing, and laying them into two-furrow work, and perhaps adding, what he has used with so much success, lime.

Having said so much upon the subject of levelling ridges, let it not be deemed presumptive, if a suggestion be added for the purpose of trial and hint, as to what

what may seem the best and most prudent way of performing this operation. In the first instance, deep drains should be cut round the fences of the field intended to be levelled, and then the water diverted from its course along the furrows by under-drains into such deep ditches. Next to this, small lands or ridges about two yards and a half wide, should be formed in what are now furrows, as several farmers have done in such instances, so that between the broad ridges there lies a small ridge, forming two furrows instead of one, between the broad ridges. Immediately after harvest, as a preparation for a fallow, the land should be ploughed by ridging (*i. e.* gathering), towards the tops of the small ridges, and so on to the crowns of the large ridges, without regarding the furrows between the small ridges and the large ones. This process would leave open furrows upon the crowns. Such open furrows should be deepened by double-breasted ploughs, and then the spade should be used to take out from their bottoms eighteen inches depth of soil, which soil should be spread about the land. But all this should be done before Christmas. By this method the crowns of the ridges will be considerably reduced, and that which has hitherto been a steril soil, will, by being spread over the land, with the assistance of a winter's exposure to frosts and snow, produce very fertilizing effects. This use of the spade might also be made with good effect upon clover leys, provided the process takes place before Christmas. Early in the spring, the earth thus spread over the land should be well harrowed and rolled as soon as it is dry enough to break into pieces, and when it is thus well mouldered, the land should be cross-ploughed or obliquely ploughed, according to the judgment of the ploughman, but in
either

either case in two-furrow work. When the land is dry and the harrows can take effect, that is, when the two-furrow work has been exposed to the air long enough, so as to moulder upon being harrowed, then the harrows should be applied.

The foregoing process repeated where necessary, will very soon reduce the ridges to a level, and at an expense which will soon be repaid, particularly if such manures, lime for instance, or any earths differing as much as possible from the soil, be applied, as will fertilize the covering brought from the subsoil of the crowns. By thus levelling the surface, tillage may be performed in a husbandman-like manner, the ridges laid into any breadth, manures applied to more advantage, cross-ploughing adopted, and the treading of the horses a-breast in the plough, not be complained of; the swing-plough with two horses driven with reins may be used, and scarifiers (if not the drill) introduced.

Mr. Freeman, at Fawley Court, where the land is very flinty, and where all the kinds of soil of the Chiltern Hills are to be found, performs all his tillage by only two horses or two oxen a-breast in the Scotch plough, and by one horse in a drill. Mr. Freeman pursues the Northumberland husbandry in tillage and every other respect.

In general, the lands which are to be tilled for turnips are broken up as soon after harvest as possible; but lands to be fallowed for corn not till the spring.

Mr. Allen, at Checquers, breaks up his wheat stubbles for turnips as soon after harvest as he can.

Mr. Graves, of Westbury, ploughs his fallows for turnips once before Christmas, and then a second time in the spring, as soon as the weather permits and he can, and afterwards as often as necessary, so as to clean
the

the land. His lands are all flat, and he ploughs across and obliquely, in order to stir the soil, and expose it as much as possible to the influence of the weather. The soil is a mixture of clay and calcareous earth upon a limestone.

Mr. Hayward, of Stoke-Goldington, in his tillage uses five horses at length in a plough for a dry fallow, the first time of ploughing, and after that four horses only. He breaks up the land for a fallow in May. He harrows with two horses a-breast.

Mr. Whitworth, of Cold Brayfield, tills as little as possible; he says his crops are all best where the land is least stirred. The soil is clay upon limestone and gravel.

Mr. Smith, steward to T. Sheppard, Esq. at Thornton, breaks up his fallows about Christmas, ploughs deep with four horses, and lets the land lie till May: then he ploughs the furrows back, and sometimes harrows. He afterwards ploughs as often as necessary in order to get a clean tilth, harrows very little, and never rolls. This is the mode of tillage most prevalent upon heavy lands: but Mr. Sheppard deviates from the general practice, by never ploughing in the spring for barley or oats. Mr. Sheppard sows upon the earth which was ploughed before Christmas, and then scarifies once, after which he sows again and harrows. This mode of tillage is excellent, it preserves for vegetation the soil, which has been mellowed by the winter's frosts, and destroys all annual weeds. Mr. Sheppard's stubbles are all clean.

In the neighbourhood of Eytlorpe the tillage is performed by three or four horses at length in a plough, according to the season, without respect to any other circumstance but that of cleaning the land as much as possible.

possible. The land is cross-ploughed and harrowed twice or thrice, never more than once after a ploughing, and never two-furrowed; nor do they here or elsewhere in Bucks, ever trot the horses in harrowing. The reason given universally for driving the horses in a plough *at length*, is, that they may tread only the dead or steril soil.

Mr. Smith, of Aylesbury, cross-ploughs his land.

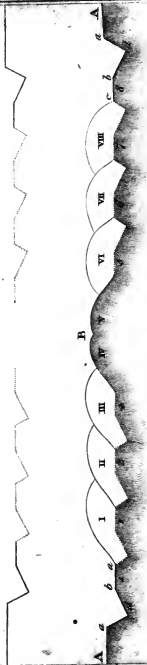
Mr. Chaplin, of Aylesbury, seldom harrows: he ploughs with four horses at length. The general reason given for not harrowing is, that after harrowing the land runs together and bakes.—*Query*. Why then do they not lay it up in two-furrow work?

Mr. Woodman, of Stone, sometimes uses a Norfolk plough with two horses. He never two-furrows his land, but allows that heavy land ought to be exposed as much as possible to sun and air: his lands are flat and furrows straight.

Mr. Forster, of Wendover, is a strong advocate for two-furrowing land; he says it is the only way of pulverizing it, and therefore he does it as much as he can, but it will not bear to be harrowed, being too clayey. He has a mode of tillage in order to counteract the effect of the clay upon his turnip crop, which is singular and efficacious. His land is very liable to bake, and to become so hard after rain as to render it very difficult to hoe the turnips; to prevent which, as soon as his turnips are sown, if they are done by the common method broadcast, and upon flat work, he lays the whole of the field into very small two-furrow work by a double-breasted plough, the share of which is very flat, and by a depth of only three inches merely runs up over the seed after it is sown, very small ridges of earth, about sixteen inches wide, but sufficient

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ent to keep the soil open, and perfectly well prepared for the hoes to work with ease.

Mr. Forster finds this mode of tillage so congenial with the soil of his farm, that upon his fallows, when in two-furrow work, he lays his manure, and covers it by splitting the two-furrow work with his double-breasted plough. The same mode of tillage is pursued upon Dr. Wells' farm at Ellesborough.

R. Ward, Esq. of Hyde Lodge, exposes his land as much as possible to the winter's frost and air.

Mr. Lovell, at Lee, near Wendover, lays his fallows into *bouts*, i. e. two-furrow work and four-furrow work, and harrows as often as possible.

Mr. Davis, at Cheynies, as soon as harvest is over, ploughs his stubbles for a fallow for turnips in four-furrow and two-furrow work.

Mr. Moberley, of Halton, breaks up his fallows, by furrows three and three inches and a half deep, and by four horses at length.

At Castlethorpe, upon high ridges, Mr. Kitelee never cross-ploughs nor two-furrows his land, and uses the harrow very sparingly.

At the Brickhills the tillage is all performed by the swing-plough with two horses a-breast.

Plate XII. is a diagram of the forms of the furrows cut by a plough at work upon the Chiltern Hills, as it was taken upon the spot, laid down one-eighth of an inch to an inch, and is given in order to afford an opportunity to those whom it may concern, to consider whether tillage by such irregularity in the depth of the soil, be disadvantageous or not, and whether it arises from the awkwardness of the ploughman in holding his plough, as stated in Chap. V. page 106, or the bad form of the share, the head and the wrest of the plough.

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The tillage was upon a stubble breaking up for turnips.

A *a*, A *a*, is the surface of the field uncut by the plough; B is the crown or top of the ridge.

I, II, III, IV, V, VI, VII, VIII, are the sods turned up by the plough, and corresponding to the furrows 1, 2, 3, 4, 5, 6, 7, 8, respectively, that is, sod IV comes from furrow 4, sod V from furrow 5, and so on. The ground then is cut in the repeated form of *a d b c*, *a d* being 4 in. *a b* 6 in. and *b c* 4½ in. and the depth of *b c* is not more than 1½ in.

Mr. Arbutnot, who has been mentioned in Chap. V. says, "My rule is, that the point of the share, point of the fin, and heel of the land side, shall all touch a level surface," *i. e.* shall all be in one plane, "when the plough stands upright, forming an arc from the point of the share to the heel at the bottom, and the same on the land side."

The following instance of tillage may serve to shew the great expense attending it in some parts of the county. It was upon the Chiltern Hills, upon a farm where the farmer was finishing the ploughing, sowing, and harrowing of eleven acres of turnips. He had employed four horses in a plough, with a man and boy, five days, besides four horses and a man at harrow one day. The same work would be done in Norfolk upon land not easier to till, by the same number of horses and only two men, in three days; nay, by not very extraordinary exertion in two days and a half.

SECT. II.—FALLOWING,

Is in all the open-fields in this county, the invariable and incorrigible practice. This takes place one year in three, and is called sometimes a *clean* fallow, meaning, as it may be presumed, a *cleaning* fallow, sometimes a *complete* fallow, and sometimes a *naked* fallow. The import is a year's rest from a crop of corn, when the land undergoes the process of cleaning and manuring. That such a practice should exist at the present enlightened æra of agriculture, would seem strange indeed, attended as it is with the loss of a crop every returning third year, were it not considered, that with the practice rights have crept in, and are now established by custom not to be alienated but by Act of Parliament, which prevent the total abolition of the practice. This, together with other rights and usages attending open-fields, renders them but of little worth. It is, however, in vain to urge any arguments against it, or to produce instances of its bad effects in the case of open-fields: nothing but enclosing by Act of Parliament can render them as they might (and ought to) be, worthy of record in an Agricultural Survey.

Where fallowing is really in practice what it pretends to be in theory, the means of rendering land free from foul and exhausting weeds, and of fertilizing it by proper exposure to air and heat, and by manures, it might be defended by the necessity of the case, were it not possible to produce the same effects without the loss of a crop. But too often it happens, that by neglect in breaking up fallows in proper time, and by delay in cleaning and turning them over, as well by bad manage-

ment in tillage, land receives as much injury as if it had a crop of corn growing upon it : a fact which has been exemplified in innumerable instances. And with respect to the necessity of the case, arising from that foulness which is contracted by repeated cropping, such necessity should not exist, nor does it, where cleaning crops are properly introduced, and where an improved tillage prevails. In these instances, fallowing is not exploded, but superseded, for its effects are produced by proper management in cropping and tillage, and by introducing a crop in the fallowing year, which upon the Chiltern Hills is a crop of turnips ; and it would have been an ornament to the agriculture of Bucks, if it had been possible to state that crops of cabbages had been found upon the fallows on the heavy lands : a few cabbages are grown, but only where turnips would succeed better.

Upon the Chiltern Hills, turnips are grown upon the fallows : upon the heavy lands, and such as are become foul by time, complete fallows take place. In the south parts of the county, near to London, and the great road passing from Colnbrook to Maidenhead towards Bath, the lands are cropped year after year without fallows, being supplied with abundance of manure from inns, barracks, and London, and cleaned of twitch-grass by women and children employed to pick it up.

The fallows for turnips are broken up before Christmas, those for wheat seldom early in the spring, and the harrows are very sparingly used. Cross-ploughing is adopted upon flat lands, but very seldom upon lands in high ridges : where it was done the tillage was irregular, the depth being very different upon the crowns of the ridges from that in the furrows.

Mr.

Mr. Forster, of Wendover, thinks the practice of breaking up land to be fallowed so deep as five or six inches, a great error, especially if it be very foul, and that it is delayed very often too long. He says, that instances are known to him, where the fallow has not been broken up before July.

At Whaddon the bean-stubbles to be fallowed are broken up in April and May.

In many parts of the county the fallows had not been ploughed a second time in the second and third weeks of June.

Mr. Hayward, of Stoke-Goldington, breaks up his fallows in May, such being the practice of that neighbourhood.

In the neighbourhood of Eythorpe the ploughings upon the fallows are done according to the season, without respect to any other circumstance but that of cleaning the land.

Mr. Grace, of Risborough, breaks up his fallows as soon as wheat-sowing is finished; the depth is about four inches. The fallows upon his heavy lands bear no crops, those upon the Chiltern Hills and light lands are sown with turnips. All along the Ikenild way, which lies by the side of the Chiltern Hills, complete fallows are made on the side next to the Vale of Aylesbury, and on the other side, upon the Chiltern Hills, turnips are sown upon the fallows.

Mr. Shickle, steward to J. Ayton, Esq. at Missenden, who is a Norfolk husbandman, thinks a complete fallow a loss of a crop, unless the land has been suffered to be overrun with twitch grass or other perennial weeds, and require extraordinary time to clean it. The same is the opinion of Mr. Forster, steward to

Strickland Freeman, Esq. of Fawley Court, who is a Northumberland farmer.

Mr. Heath, of Wycombe, sometimes fallows two years together, in order to get rid of charlocks. He first gives either a complete fallow, or what is termed a *bastard summer-till*, for wheat, and then the year after fallows for turnips. Such fallows well managed must render land perfectly clean.

It has been observed once and again, that the harrows are very sparingly used; it follows therefore as a necessary question, how are the fallows cleaned? the answer is in some places, *i. e.* in the south, by employing women and children to pick up the weeds; and in others, where women and children are not to be procured, by men with forks with three tines; in a few places by the scarifier, and in none by the harrow, according to the Norfolk husbandry.

SECT. III.—ROTATION OF CROPS.

A PROPER succession of crops, stands foremost in the points necessary to be attended to in the agriculture of a country. So much has been written upon this subject by practical agriculturists, and by men well versed in the nature of vegetation, the food of plants, and the analysis of soils; and so much is daily discovered by the eye, and felt in the deficiency of the crop of the farmer, from improper conduct in this respect, that it is much to be wondered at, that errors so flagrant should still exist in practice. Much, however, of the apparent

patent impropriety in this respect seen in Bucks, arises from circumstances unseen, but necessary to be enumerated.

1. Rights peculiar to certain districts.

These produce what is called the open-field culture.

In the 1st year summer-fallow,

2d — wheat,

3d — beans, changed sometimes to oats, pease, barley, or clover.

2. A subserviency to pasturage. This produces upon a grazing or dairy farm merely corn for the sake of straw, and for the sake of pigs and manure. The feeding of beasts for market is chiefly confined to the summer, except in a few instances of stores or of prime beasts, and therefore upon the arable land of such farms, little provision is made for winter, and no system of cropping is observed. This is the case upon Mr. Westcar's farm.

3. Rich soils. These enable a farmer to follow any rotation of crops which will not offend his landlord, if he has no lease; or be consistent with the covenants of his lease if he has one: but these seldom prevent a farmer from taking three crops in succession, or are very rare. In such instances, therefore, but little checks are given to avaricious dispositions, particularly if they hire under kind landlords, easy to be prevailed upon by artful tales. It is no wonder then in such cases, that we find such a rotation as the following:

From sward.

In the 1st year oats,	In the 5th year fallow,
2d — wheat,	6th — barley,
3d — wheat,	7th — wheat,
4th — oats,	8th — oats;

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or

or that we hear of farmers amassing 18,000*l.* or 20,000*l.* within a few years.

4. External resources of manures. These may occasion any rotation of crops convenient to a farmer. In such cases farms lose their names, and become gardens. Such farms are seen along the great road from Colnbrook towards Bath: they are supplied with manure from London, barracks, inns, and hired* sheep; and if the lands are but kept clean, no system of cropping is thought necessary. The only cases in which judgment is requisite for the choice of a rotation of cropping, are those where farms must provide for their own subsistence by the internal management of them. In such cases the rotation of crops, as has already been stated, is a point of the utmost importance, because it involves a knowledge of every branch of farming.

Having made this apology for such rotations of crops as might be deemed erroneous, if it were not known that causes might exist to produce them, without the imputation of want of judgment upon the part of the farmer, I shall state the different courses as they were communicated by the farmers themselves, or by persons of respectability well acquainted with them.

The open-field course has been stated to be upon heavy lands,

1. Fallow,
2. Wheat,
3. Beans.

That is, the open-fields generally are three, containing a great variety of property. In one field are various

* See this explained in Chap. XII. Sect. 3. Article *Sheep's Dung*.

properties

properties all fallow, in another all wheat, and in a third all beans. To these is attached a common for stock. It is not necessary that in the wheat field all should be wheat; a farmer *may* grow what he pleases, and the same may be said of the bean field, but he must every third year have a fallow. The wheat crop generally is good, but should any cause injure it, to what a wretched state is a farmer reduced in such a confined course as this? In some cases of the open-field culture, the rotation is altered by private agreement: but they are rare, and there is no protection against the common stock, but the courtesy of the proprietors of such stock, otherwise enclosures might take place without Acts of Parliament.

The following are courses upon enclosed land.

In the neighbourhood of Stoke-Goldington, upon heavy lands the course is,

1. Fallow,
2. Wheat or barley,
3. Beans;

or instead of beans, the third year clover, and then wheat, thus:

- | | |
|------------|-----------|
| 1. Fallow, | 4. Wheat, |
| 2. Barley, | 5. Beans. |
| 3. Clover, | |

But sometimes here, as in other places, instead of beans, wheat succeeds wheat, and too often one corn crop after another, until the land is completely exhausted, and no crops will grow.

At Olney, the rotation upon heavy lands is,

- | | |
|------------|----------------|
| 1. Fallow, | or, 1. Fallow, |
| 2. Wheat, | 2. Barley, |
| 3. Oats; | 3. Clover, |
| | 4. Wheat; |

or,

- | | |
|-------------------|----------------|
| or, 1. Fallow, | or, 1. Fallow, |
| 2. Wheat, | 2. Barley, |
| 3. Clover, | 3. Clover, |
| 4. Oats or beans; | 4. Beans, |
| | 5. Wheat. |

Upon turnip land the course is,

- | | |
|-------------|------------|
| 1. Turnips, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

At Cold Brayfield, Mr. Whitworth has the following course :

- | | |
|-------------|---------------------------|
| 1. Turnips, | 4. Wheat, : |
| 2. Barley, | 5. Oats, pease, or beans. |
| 3. Clover, | |

When clover returns the second time, Mr. Whitworth sows Dutch with the red, and lets the land lie two or three years.

Mr. Moberley, a tenant of Sir John Dashwood King, at Halton, informs me, that the rotation of crops below the Ikenild way is,

1. Fallow,
2. Wheat,
3. Beans, pease, or both.

Sometimes instead of beans oats are sown, and sometimes barley; then comes a fallow again, but oftentimes upon this fallow clover grows, or vetches, and then the same course follows, viz. wheat, &c. There seems to be no apparent reason why turnips should not be grown upon this fallow below the Ikenild way. Vetches are injurious to the land, as Mr. Moberley allowed, and wheat after vetches there, are never so good a crop as after a fallow. These are strong reasons for altering the above course.

Mr.

Mr. Moberley's rotation of crops above the Ikenild way, is,

- | | |
|--------------------|-------------------------|
| 1. Fallow, | 4. Clover for one year, |
| 2. Wheat, | 5. Wheat. |
| 3. Barley or oats, | |

Sometimes, instead of wheat after clover, a crop of barley is taken. Such a course of cropping as this does not enable a farmer to keep a sufficient quantity of stock.

Mr. Forster, of Wendover, has the following rotations :

- | | |
|--------------------------------|----------------------------|
| 1. Fallow, | or, 2. Fallow for turnips, |
| 2. Wheat, | 2. Barley, |
| 3. Beans, | 3. Clover, |
| 4. Vetches fed off with sheep, | 4. Wheat, |
| 5. Wheat; | 5. Turnips; |

and sometimes upon the turnip ground oats or pease after wheat. Mr. Forster has one rotation upon the top of the hills near Wendover, which suits that situation well : it is,

1. Turnips, fed off by ewes and lambs,
2. Barley,
3. Clover and ray-grass,
4. The same,
5. Oats, and then turnips again, and so on ;

and upon some lands a succession of wheat and trefoil for many years.

Upon some rich lands he has,

- | | |
|------------|------------|
| 1. Fallow, | 4. Fallow, |
| 2. Wheat, | 5. Barley, |
| 3. Beans, | |

Mr. Lovell, of Lee, fallows forty or fifty acres for turnips,

turnips, and follows no system of cropping : he sows according to his judgment.

J. Ayton, Esq. at Missenden, pursues the following course of cropping :

- | | |
|-------------|------------|
| 1. Turnips, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

Mr. Ayton ploughs up the clover leys as soon as the first crop is off. He never mows a second time. Mr. Ayton has some instances of barley and oats after wheat, but his bailiff urged, " that it was done by accident, Mr. Ayton having but lately taken the farm ; that such practice is bad, and not to be pursued."

At Amersham the rotation in the open-fields is the same as in all other places : fallow, wheat, beans ; but in the enclosures the following :

- | | |
|-----------------|-----------------------------|
| 1. Fallow, | or, 1. Fallow, |
| 2. Wheat, | 2. Wheat, |
| 3. Oats, | 3. Oats, |
| 4. Clover ; | 4. Half vetches half beans, |
| | 5. Wheat ; |
| or, 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Oats, beans, or pease. |
| 3. Clover, | |

Mr. Fowler sometimes lays manure, viz. soot and ashes, upon his clover, as well before the second crop as the first, and then takes the second crop for seed, and in the following year mows it again, when he has sometimes got two tons of hay per acre ; he then breaks it up and tempers the land for wheat. In that case Mr. Fowler sometimes has the following rotation :

- | | |
|------------|-----------|
| 1. Clover, | 4. Beans, |
| 2. Clover, | 5. Wheat. |
| 3. Wheat, | |

The

The beans are set in rows, thirteen rows in a pole, and hoed twice. Mr. Fowler purchases and scrapes together a large quantity of manure, and for that purpose employs women and children to gather it in the roads.

Mr. Forster, bailiff to S. Freeman, Esq. at Fawley Court, pursues a four years' course:

- | | |
|--------------------------------|-------------------|
| 1. Turnips, vetches, or pease, | 3. Clover, |
| 2. Barley or wheat, | 4. Wheat or oats; |

but intends to try a five years' course, by sowing Dutch clover with red, thus:

- | | |
|-------------|----------------------|
| 1. Turnips, | 4. 2d year's clover, |
| 2. Barley, | 5. Wheat or oats. |
| 3. Clover, | |

The common practice of the neighbourhood is,

- | | |
|-------------|--------------------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Barley or oats. |
| 3. Clover, | |

Indeed, "it is scarce possible to say that any regular rotation of crops exists, for the farmers continue to sow one crop after another, until the land requires fallowing, in order to begin again the same exhausting round. They have for a few years lately sown clover, finding they get better crops of wheat after that valuable grass than by any other mode of preparation, but it is not yet adopted into their system as a regular succession crop."

Would not the following be a desirable rotation at Fawley?

- | | |
|-----------------|--------------------------|
| 1. Turnips, | 6. Barley, |
| 2. Barley, | 7. Red and Dutch clover, |
| 3. Clover, red, | 8. Clover, second year, |
| 4. Wheat, | 9. Pease. |
| 5. Turnips, | |

Part

Part of the pea stubble might be sown with vetches, and the vetches be cut in time for turnips next year. The wheat stubble might also be turned in and sown with turnips, to be fed off by sheep, preparatory to the fallow for turnips. By this rotation, much more stock might be kept than can by the common practice.

Mr. Forster observes upon his four years' course, that "the avoiding of two crops of grain in succession, tends materially to prevent the deterioration of the soil, which is generally allowed to be much sooner exhausted by frequent crops than by the intermediate crops of turnips and clover, which deriving a considerable portion of their nutriment from the atmosphere, keep the land in a comparative state of rest.

At Marlow the rotation is,

- | | |
|-------------|------------|
| 1. Turnips, | 3. Clover, |
| 2. Barley, | 4. Wheat; |

and the same by agreement upon the open-fields there.

At Beaconsfield the same rotation takes place. Mr. Jagger observes, that the wheat stubbles are ploughed immediately after harvest, and turnips are sown to be fed off by sheep before Christmas, and the wheat crop is forced by woollen rags. The clover crop is half of it red and half Dutch, by which means red clover comes in succession only once in eight years, and the crop does not fail.

At Westbury, Mr. Graves has this rotation :

- | | |
|-------------|------------|
| 1. Turnips, | 5. Wheat, |
| 2. Barley, | 6. Oats, |
| 3. Clover, | 7. Beans, |
| 4. Clover, | 8. Clover. |

Mr. Graves sometimes alters this course: he always grows vetches for soiling his horses, and after them

them wheat. He also grows sainfoin, which after fourteen or fifteen years, he pares and burns.

At Little Brickhill Mr. Hall pursues the following course :

- | | |
|-------------|------------|
| 1. Turnips, | 4. Clover, |
| 2. Barley, | 5. Wheat, |
| 3. Clover, | 6. Oats. |

This is light land improper for wheat, and less so for two corn crops in succession. Instead of oats, some farmers in the neighbourhood sow pease, and others more judiciously begin again with turnips.

Edward Hanmer, Esq. of Stock Grove, next to Great Brickhill, has the following course :

- | | |
|-------------|-----------------|
| 1. Turnips, | or, 1. Turnips, |
| 2. Oats, | 2. Barley, |
| 3. Clover, | 3. Clover, |
| 4. Clover, | 4. Clover, |
| 5. Barley ; | 5. Oats. |

Sometimes the clover ley is broken up for wheat, and sometimes for beans. This is judicious management, and it would be well for the neighbourhood if they would follow it upon their sandy and hilly fields.

Mr. Hanmer has only 45 acres of land. By his good management he is enabled to keep 4 horses, 2 cows, 50 sheep, and 12 pigs, without any other resource but his farm : of course he sells nothing. He has 8 acres of corn, 6 of turnips, 10 to mow, and the rest pasture.

Mr. Langton, of Cippenham Court, near Salt Hill, generally fallows 70 or 80 acres for turnips, to be fed off by sheep. He has no avowed fixed rotation of crops : the following is sometimes pursued by him :

- | | |
|-------------|----------------------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Barley, |
| 3. Clover, | 6. Vetches or beans. |

Upon

Upon the wheat stubble Mr. Langton sows turnips, to be fed off by sheep, and after vetches very often wheat.

At Horton, nearly the same method is pursued as at Salt Hill: as land becomes foul it is fallowed for turnips, then follow barley, clover, wheat, oats, beans, and pease, wheat. Mr. Williams manures for turnips, feeds off the turnips by sheep for the barley crop: lays ashes or some kind of manure upon the clover, and also upon the beans and pease. If manure is laid upon the wheat crop, it falls in the summer before it is ripe:

At Cheynies, Mr. Davis pursues the following courses:

Upon turnip land;

- | | |
|-------------|-------------------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Oats or pease. |
| 3. Clover, | |

Upon land not proper for turnips,

- | | |
|-------------------------------|-----------|
| 1. Vetches, fed off by sheep, | 4. Wheat, |
| 2. Wheat, | 5. Oats. |
| 3. Clover, | |

At Wycombe, Mr. Heath fallows part of his wheat stubbles for turnips, and sows the remaining part with vetches, to be fed by sheep, and sown with turnips the same year; then follow barley and seeds. Wheat is sown upon one year's ley after the ley has been mown, and then fed with sheep. He also gives a clean fallow to a small portion of his farm. Mr. Heath keeps down about 200 acres of feeding grass, and breaks up for oats about one-third every year.

Upon Lord Carrington's farm, which Mr. Heath shewed me by his Lordship's orders, the Norfolk system

tem of turnips, barley, clover, wheat, prevailed with necessary variations, when the land is tired of clover. The crops of barley and clover were excellent, and those of wheat tolerable. One of the farms in his Lordship's occupation had been improperly cropped, by a tenant having in some cases had wheat three years in succession, and therefore could not at once be brought to the established course which his Lordship pursues: in that case, necessarily occurred a little irregular cropping, on account of the great quantity of fallow as, thus, after wheat oats were in one case laid down with clover. I mention this for the sake of suggesting what I have known done in such an instance with success, that of sowing instead of oats, coleseed, to be eaten off by sheep.

Mr. Pope, of Chesham, upon turnip land, has the same rotation as is found at Marlow, viz.

- | | |
|-------------|---------------------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Sometimes pease. |
| 3. Clover, | |

Mr. Pope lets land lie two years with clover, or more if he finds a failure in the first year of clover: after which he sows wheat and sometimes oats, for the sake of having more feed upon the leys of clover. Mr. Pope sometimes has sown wheat after turnips, but he disapproves the practice: upon wheat stubbles he sows vetches, particularly if the land be foul, and then turnips in the same year, and in the year following fallows for turnips.

In the neighbourhood of Checquers, the property of R. Greenhill, Esq. the course is two crops and a fallow, viz.

BUCKS.]

M

1. Fallow,

- | | |
|---------------------------|------------------------|
| 1. Fallow, | and, 1. Turnips, |
| 2. Wheat, | 2. Barley, |
| 3. Beans, pease, or oats. | 3. Clover and trefoil, |
| | 4. Wheat. |

If clover is continued two years, very often oats are grown instead of wheat.

At Wing, Mr. Hart says the rotation is,

- | | |
|---------------------|--------------------|
| 1. Turnips, | or, 1. Turnips, |
| 2. Barley, | 2. Oats, |
| 3. Clover, | 3. Turnips, |
| 4. Wheat, | 4. Barley, |
| 5. Pease or beans ; | 5. Clover, |
| | 6. Wheat, |
| | 7. Pease or beans. |

If the land is too heavy for turnips, in that case it is,

1. Fallow,
2. Wheat or barley,
3. Pease or beans.

And Mr. Heley gives also the following, as being sometimes pursued :

- | | |
|-------------|-----------------------------|
| 1. Turnips, | 4. Clover, |
| 2. Barley, | 5. Wheat, |
| 3. Clover, | 6. Beans, pease or barley ; |

to which I will also add, or oats. He says that when land becomes foul, then it is fallowed again.

Mr. Bailey, bailiff to Dr. De Salis, pursues the following courses :

- | | |
|-------------|-------------------------------|
| 1. Turnips, | 5. Vetches, fed off by sheep, |
| 2. Barley, | 6. Wheat, |
| 3. Beans, | 7. Clover, |
| 4. Oats, | 8. Clover. |

1. Turnips,

- | | |
|-------------|-------------|
| 1. Turnips, | 4. Turnips, |
| 2. Barley, | 5. Oats; |
| 3. Clover, | |

and sometimes,

- | | |
|-----------------------------|------------|
| 1. Beans, drilled and hoed, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

In the neighbourhood of Stone was the same pernicious succession of crops as has been noted elsewhere, and is too frequent.

Mr. Woodman follows this course :

- | | |
|-------------|------------|
| 1. Turnips, | 5. Beans, |
| 2. Barley, | 6. Barley, |
| 3. Clover, | 7. Clover, |
| 4. Wheat, | 8. Wheat. |

But Mr. Woodman says he shall endeavour to grow wheat and barley upon the same land, each once in four years : turnips the same, and then one-fourth of his arable land will be divided half into crops of clover, and half into pulse, viz. beans, pease, and vetches.

Mr. Chaplin, at Aylesbury, has the following courses :

- | | |
|-----------------|------------------|
| 1. Fallow, | and, 1. Turnips, |
| 2. Wheat, | 2. Barley, |
| 3. Beans, | 3. Clover, |
| 4. Barley, | 4. Wheat; |
| 5. Clover, | |
| or, 1. Turnips, | or, 1. Turnips, |
| 2. Barley, | 2. Barley, |
| 3. Beans, | 3. Beans, |
| 4. Fallow, | 4. Barley. |
| 5. Wheat; | |

He grows also vetches upon the fallow, and then

sows wheat after them ; but the general practice is after a fallow to grow wheat, and after turnips barley. Some occupiers never fallow nor sow for turnips.

Mr. Smith, a tenant of Lord Carrington, at Aylesbury, pursues this course :

- | | |
|-------------|------------|
| 1. Turnips, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

After four rounds the clover fails, and therefore he changes sometimes to,

- | | |
|------------|------------|
| 1. Beans, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

At Winchendon, Mr. Rose generally pursues the following course of crops :

- | | |
|-------------|-----------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Beans. |
| 3. Clover, | |

If, however, a piece of land is not proper for turnips, he takes the following order :

- | | |
|------------|------------|
| 1. Beans, | 3. Clover, |
| 2. Barley, | 4. Wheat. |

When land is at all foul, Mr. Rose makes a complete fallow, but for no other purpose except for the sake of cleaning it, for he says his best wheat crops are grown after clover upon a *bastard summer till*. He always grows turnips where he can upon the fallows. In case he is obliged to fallow without turnips, Mr. Rose follows it with wheat, then beans and pease, and then oats. He thinks by growing pease and beans together, the ground is more completely smothered, the evaporation of vegetable particles less, and weeds fewer. When his land is tired of red clover, as Mr. Rose says it will be by the four years' course, Mr. Rose

SOWS

sows Dutch clover with the red. He grows every year a certain portion of vetches for his horses, which are followed by wheat.

From hence, along the western side of the county by the Claydons and Winslow to Buckingham, are dairy farms, and lands under open-field culture.

At Buckingham, lands are fallowed when foul, and under no rule as to cropping.

At Hillesden, Cowley, and Preston, Mr. Coke's estate, the farms are chiefly pasture.

Mr. A. Lynes upon heavy land follows this course :

- | | |
|------------|---------------------|
| 1. Fallow, | 3. Beans, |
| 2. Wheat, | 4. Oats or barley ; |

and upon turnip land the following :

- | | |
|-------------|--------------------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Beans, dibbled, |
| 3. Clover, | 6. Oats. |

In the same place Mr. Graves, upon breaking up sward, pared and burnt :

- | | |
|---------------------|-------------|
| 1. Oats or wheat, | 4. Vetches, |
| 2. Pease and beans, | 5. Wheat. |
| 3. Wheat, | |

At Stowe, Mr. Parrot, steward to the Marquis of Buckingham, pursues no system of cropping. Mr. Parrot uses the drill, and thinks it might be used with success in most parts of the county.

At Fenny Stratford, in the enclosed lands some farmers follow this course :

- | | |
|-----------------|-------------|
| 1. Fallow, | 5. Turnips, |
| 2. Wheat, | 6. Barley, |
| 3. Beans, hoed, | 7. Clover, |
| 4. Oats, | 8. Wheat. |

At Thornton the course was :

- | | |
|------------|-----------|
| 1. Fallow, | 4. Wheat, |
| 2. Barley, | 5. Oats. |
| 3. Clover, | |

At Weston Underwood Mr. Swannell has,

- | | |
|----------------------------|--------------------------------|
| 1. Fallow, | and, 1. Turnips, |
| 2. Barley, | 2. Barley, |
| 3. Beans, sometimes pease, | 3. Clover, |
| 4. Wheat ; | 4. Beans dibbled, or
wheat. |

Mr. Swannell also grows potatoes.

At Tyingham and Tilgrave the rotation sometimes is,

- | | |
|-------------|-----------|
| 1. Turnips, | 4. Wheat, |
| 2. Barley, | 5. Oats. |
| 3. Clover, | |

But in this neighbourhood lands are rich, and farmers crop without rule ; the ill effects of which must be felt sooner or later. The Rev. Mr. Drake, of Stoke-Goldington, mentioned a very strong instance of the ill effects of cropping too much upon a piece of land of four acres belonging to him. It was sown with beans, but not having seed enough, his servant sowed barley upon one ridge for fowls: the wheat next year was by no means so productive upon the part where the barley was sown the year before, as it was where the beans grew, and yet it had double the quantity of manure.

There was no where better management in the rotation of crops, than upon Earl Spencer's farms at Castlethorpe. His Lordship has about 1300 acres occupied by two brothers, Mr. Thomas and Mr. Joseph Kitelee. Their rotations are :

1. Turnips,

1. Turnips,	or, 1. Fallow,
2. Barley,	2. Wheat,
3. Clover,	3. Clover,
4. Wheat,	4. Barley,
5. A fallow for cabbages or turnips,	5. Beans or vetches,
6. Barley,	6. Fallow,
7. Beans or vetches,	7. Barley,
8. Wheat ;	8. Clover,
	9. Wheat ;
or, 1. Fallow,	4. Wheat,
2. Barley,	5. Beans or vetches.
3. Clover,	

These gentlemen fallow only when it is necessary to clean their land, change the crops as much as possible, and never grow two crops of corn in succession. They also upon part of their wheat stubbles sow vetches, which they get off in June, time enough to plant cabbages and sow turnips.

Such management more commonly adopted than it is in Bucks, would give new features to its agriculture, instead of the too prevalent practice of sowing corn after corn, without the intervention of a green crop.

Observation.—Upon the whole, four causes have been stated at the beginning of this Chapter, as apologies for a deviation from the common rules of cropping discernible in this county. The first prevails chiefly in the interior, and such parts of the county as lie beyond the Chiltern Hills north, and must continue to operate, odious as it is, until the proprietors of estates, under such circumstances, shall see and be convinced of their error, and feelingly know, that they are now fostering a system of agriculture injurious to

the farmer, themselves, and their country, by obliging the first to a course of husbandry from which it is with great difficulty he can at present pay his scanty rent; to themselves, by accepting a rent only one half, and in many cases one-third of its real value; and to their country, by withholding* from it the supplies naturally to be produced on the score of stock and of corn.

The second cause requires no alteration upon suppositions not to be disputed, that the pasturage makes ample returns for the service of the arable; that the judgment of the occupier leads him to a mode of tillage capable of keeping his land clean, and that the proportion of pasture to arable is but small.

The third cause is too enchanting and too seducing not to claim attention; undoubtedly it has given rise to a mode of cropping upon farms of a mixed nature, and, in the north of the county, such as theory and good practice would not dictate or countenance. To exhaust land of its vegetative qualities until it is necessary to recover them again, and because it is possible to recover them, is surely barbarous, ill-judged, and injurious, if it *is* possible. We would not so work a horse. It is the mark of an avaricious tenant, who endeavours to gain all he can from his farm within a certain time, without respect to its future prosperity, and never will be practised or allowed by that man, who knows that by the common rules of husbandry, it is impossible to restore to its original state of fertility, an exhausted piece of land, if it was rich at its being first brought under the plough, though by fair usage and

* See under the Article Beer, what an acre of barley produces to the revenue, and from thence calculate the loss attending the open-field culture.

a proper supply of manure, its vegetative powers might have been preserved in a high degree.

To the fourth cause little can be said. If the farmer finds his advantage in it, and if the fertility and cleanliness of the land is preserved, in that case the public only have cause to complain on the score of stock, that is, of disappointment in the expected return of it to market; but if that deficiency is supplied by an increase of corn, hay, and straw, the balance is struck.

One hint remains to be given for the consideration of farmers upon the Chiltern Hills, comprehended under none of the foregoing heads. It is this: whether upon farms where there is so little pasture, it would not be advisable to introduce a course of cropping which should enable them to keep more stock. Thus, to lay aside in the first place every instance of a succession of corn crops, as oats after wheat, and adopt a five years' course by an alternate change of corn and green crops, keeping the land laid with clover two years at least, thus:

- | | |
|-------------|------------|
| 1. Turnips, | 4. Clover, |
| 2. Barley, | 5. Wheat. |
| 3. Clover, | |

Oats (always an exhausting crop) might alternately take place upon parts of the barley and wheat crops, in order to change the course, and for the supply of the market, or for the farmer's own consumption. Pease also might be grown in the same manner. Where vetches are necessary instead of clover, as green food for horses, they may be given in sufficient quantity upon a part of the wheat stubbles, and be followed by turnips without putting the course out of its order. Such a rotation of crops as this would lessen the tillage, increase the

the profitable and unprofitable stock (horses), and eventually produce more abundance of corn. I conclude this Chapter by the following extract from Naismith's *Elements of Agriculture*. "It should be remembered, that the fertility of a cultivated field is often acquired by its having lain in pasture. The quantity of food from cultivated crops is not always in proportion to the extent of the land cultivated. The county of Ayr, in the West of Scotland, contains a great deal of good soil. It is much more than forty years since I remember the inhabitants of that county passing in crowds with horses, pack-saddles, and empty bags, to the East, to bring pease and barley, of which they made a kind of bread to serve them in summer. At that time the farmers were under no restraint as to the proportion of their farms which they might have in tillage. Soon after, a gentleman who had the management of a great estate in that county, made a regulation in the leases, by which the farmers were bound to have never more than one-third of their farms in tillage. Other proprietors adopting the same regulation, it became general, and the farmers were afterwards restricted to plough no more than one-fourth. Of late this county, though not less populous than formerly, sends always a great deal of grain to the neighbouring districts; and instead of empty bags and pack-saddles, sends carriages loaded with cheese to Leith, to be shipped for London. Thus, by laying land which has been in tillage, frequently in pasture, the future fertility of the country is enhanced, and its present produce is not diminished."

SECT. IV.—WHEAT.

THE wheat crop in this county in the open-field culture, is that upon which alone the farmer relies for his profit from three years' husbandry, and if in such cases the wheat crop fails, or if wheat bears too low a price, the farmer has but little to depend upon to repay him his expenses; and it is too true, that these open-fields comprehend many thousand acres: it is said more than 90,000*. In the enclosed lands the case is different, because there the farmer is under the direction of his own judgment, and may pursue what course he thinks best. It will then be necessary to give, first, the culture of wheat in the open-fields, and then the different practices in enclosures, following the plan prescribed by the Board.

1. *Open-Field Culture of Wheat.*

The general practice throughout the county is to give the land a complete summer-fallow, by four ploughings lengthways of the ridges, without harrowing until the seed is sown: the twitch-grass is picked out by men with three-tined forks. The seed is sown broad-cast and then harrowed, and sometimes ploughed in. The only deviations from this practice communicated to or observed by me, were, that a few farmers sow the seed upon a *stale* earth, and a few drill in two rows at nine inches distant one from another. Manure of some sort is used, either from the farm-yard or from sheep folded upon the fallow.

* See Appendix No. VIII. of the General Report on Enclosures.

At Prince's Risborough, by agreement, and by giving previous notice of such intention, clover is sown upon the fallow, and in that case the land is not broken up for wheat until the first crop of clover is cut or fed off: but this is a particular case.

II. Culture of Wheat upon Enclosed Lands.

Under this head we shall find nothing new, and but little interesting to the practical farmer: but it is our province to report fairly the practices of the county, under the heads so judiciously pointed out by the Board, and to recommend to those who are concerned, and who are so unwilling to deviate from old practices, to look into counties where new ones have been introduced so successfully, and examine candidly what of their own may be altered with advantage.

Preparation.—Upon this point practices vary and opinions differ. Some farmers prefer a fresh, some a stale earth; some a complete fallow; others a bastard summer till, after mowing the clover crop once; some a single ploughing after mowing the clover twice in the first year; others a single ploughing after feeding the clover crop in the first year, and mowing it the second, and a few beans.

At Castlethorpe, Mr. Kitelee grows wheat upon clover leys, upon bean stubbles, and upon a complete fallow, and thinks it best upon a two years' ley of clover, if the fallow was good: but his general practice is to break up a clover ley after eighteen months.

Mr. Whitworth, at Cold Brayfield, gets best wheat when he sows it upon a second year's ley of clover, which was fed in the first and mown in the second year.

If

If land is clean, Mr. Whitworth ploughs once and harrows in the wheat, otherwise he tempers the land by as many ploughings as are necessary to clean it.

Mr. Swannell, of Weston Underwood, ploughs his clover leys once, and harrows in the wheat. He thinks a fresh earth best.

At Newport Pagnell the preparation for wheat after beans is to plough once, sow the seed broad-cast, and harrow it in.

Mr. Hayward, at Stoke-Goldington, ploughs once, sows broad-cast, and harrows in the seed. He gets the best wheat by feeding the second crop of clover with sheep.

At Olney are the same practices, besides which, some farmers break up the clover leys for tares, which they feed with sheep and then plough for wheat.

Mr. Heath, of Wycombe, finds, when wheat is to follow clover, the best management is, as soon as the clover is cut the first time, to lay on the manure and break up the ley in August, and sow upon a stale earth: but Mr. Heath gets the best crops upon complete fallows.

Mr. Taylor, of Marlow, says, wheat there is often blighted if sown upon a bean or pea stubble, and that the crops upon fallows are most certain.

Mr. Allen, at Checquers, finds the wheat crops upon a two years' clover ley, not so good as upon one year's ley, but that the crops upon clover leys are better than upon fallows, because they have fewer weeds, as charlock and red weed. He thinks, after resting two years land bears oats best.

Mr. Buckingham, steward to the Earl of Bridgewater, finds the best wheat upon clover leys.

Mr. Pope, of Chesham, grows wheat upon a one year's

year's clover ley, ploughs once, sows broad-cast, and harrows in the seed. He thinks the crops as good upon clover leys as upon complete fallows. Mr. Pope sometimes has grown wheat after turnips, but such crops have not been so good.

Mr. Forster, of Wendover, generally sows wheat upon one earth after clover, and thinks a stale earth best. If clover is cut a second time, Mr. Forster finds the crop of wheat best, and the less the land is stirred, the fewer are the charlocks and red weed. He says, in which Mr. Allen, of Checquers, agrees with him, that it makes a difference of at least a quarter per acre, if when he tempers land for wheat he lays it into four-furrow work. Mr. Moberley, at Hailon, does the same. Mr. Forster says also, it answers well to sow in January or February, wheat upon turnip land where the turnips have been fed off by sheep before Christmas; but in this case he sows white wheat, for he says, the real spring wheat is not saleable.

Much of the land here is liable to red weed, and as an antidote to it, Mr. Forster sows with his clover, trefoil, and sometimes trefoil only. He says the roots of the trefoil keep the land compact, and the flag sounder, so as to be less liable to moulder, and give the red weed an opportunity of vegetating. He therefore prepares for wheat sometimes by sowing trefoil; in which case he can go on with trefoil, wheat, trefoil, wheat, in succession, for four or five years. Fallow such land, and sow it early, and the wheat becomes winter-proud.

Mr. Grove, of Farnham, gets the best crops of wheat upon olland.

Mr. Langton, of Cippenham-court, who frequently sows wheat after tares and after beans, gets the best crops from clover-leys of one year.

Mr.

Mr. Bailey, bailiff to Dr. De Salis, grows wheat upon clover-leys and after vetches, but never after beans. His opinion is, that the wheat crop is affected by the grub in that case.

Mr. Lovell, of Lee, ploughs his leys once, and sows the seed upon a stale earth. Sometimes he ploughs three times, and then lays the land into four-farrow work by double ploughs. If turnips fail, Mr. Lovell sows wheat. Mr. Lovell finds the best crops of wheat upon complete fallows, and that a two-year old clover-ley broke up in May, produces a better crop than a one-year old ley broke up immediately after the first cutting.

At the Brickhills, Mr. Turney says the crops of wheat are not so good upon a two-years' ley, as upon a one year's ley of clover.

Mr. Sheppard, of Thornton, this year sowed one rood of wheat after potatoes, and three roods after barley, in the same field, upon the same day, and with the same quantity of seed per acre. The produce after the potatoes, was at the rate of $5\frac{1}{2}$ qrs. per acre, and that after the barley, not more than 1 qr. per acre. Hear this, ye advocates for corn crops, and learn a serious lesson.

Manuring.—Very few farmers sow wheat without some kind of manure. Either ashes from London are laid upon the clover, or the land, after being ploughed, receives farm-yard manure, the folding of sheep, soot, or woollen rags.

Mr. Chaplin, of Aylesbury, lays 14 or 15 loads of yard manure per acre upon as much land as he can. If he has not a sufficiency for the whole of his wheat crop, he folds sheep, uses ashes and rabbits' dung, and finds

finds that farm-yard manure has the best effect; then sheep, next ashes, and last rabbits' dung.

Mr. Swannell, of Weston Underwood, lays on a slight coat of manure before he ploughs his clover-leys, and after the wheat is sown, treads the land with sheep, by driving them over it slowly three or four times in a morning.

At Beaconsfield and Marlow, and their neighbourhoods, Mr. Jagger, Mr. Heather, and Mr. Webber, inform me, that woollen rags are bought from *5*l.** to *10*l.** per ton, and laid upon the land as manure for wheat; generally a ton upon three acres. In this part of Bucks sheep are also folded upon the wheat lands, both before and after sowing, and the lands are seldom ploughed more than once.

It is the observation of some farmers, that woollen rags are not so good as they used to be, and also that their effect too often is produced in the abundance of straw instead of grain. Besides manures, and the treading of sheep, some farmers here adopt the practice of rolling wheat in the spring, which has a good effect in covering the roots which have been laid bare by the frosts of winter, and in assisting the wheat to tiller.

Mr. Woodman, of Stone, lays 16 loads of manure upon his fallows for wheat.

Mr. Foulter, of Amersham, manures his fallows for wheat, but not his clover-leys.

At Risborough, Mr. Grace sometimes buys fellmongers' refuse, at *5*d.** per bushel; and woollen rags from *5*l.** to *10*l.** per ton, as manure for wheat; of which he lays on 6 cwt. per acre.

At Westbury, Mr. Graves folds sheep upon his clover-leys, after they have been once mown, before they are ploughed.

Mr.

Mr. Pope, of Chesham, in addition to the manures already mentioned, sows soot as a top-dressing upon wheat, 40 bushels per acre, bought at 1s. per bushel.

Mr. Lovell, of Lee, sows 30 bushels of soot per acre, bought at 9d. and 10d. per bushel at Brentford.

Mr. Kitelee, of Castlethorpe, sows 20 bushels of soot per acre, bought from 8d. to 10d. per bushel.

Mr. Allen, of Checquers, folds sheep upon the fallows, and lays on 11 or 12 loads of farm-yard manure. He also treads his wheat with sheep as soon as it is sown, and as it comes out of the ground.

Mr. Langton, of Cippenham-court, adopts the practice of treading wheat, after it is sown, with sheep; but this year it had a bad effect.

Season.—The time of sowing wheat is universally as soon as possible in the month of October.

Mr. Forster, of Wendover, is satisfied if his wheat crop is sown any time in the interval between a fortnight before, and a fortnight after Michaelmas. He sometimes sows in January or February upon turnip land, where the turnips have been fed off by sheep before Christmas.

Mr. Forster gave an instance of a farmer who used to finish sowing wheat by the time he finished reaping the crop of the preceding year, until one season he lost his whole crop by such practice.

If the first sowing of wheat fails on any account, Mr. Woodman, of Stone, sows wheat in the spring: so does the Rev. Mr. Rush, of the same place.

Mr. Sheppard, of Thornton, sows wheat at the latter end of September.

Putting in.—This is generally done by sowing
BUCKS.] N broad-

broad-cast and harrowing in the seed, except in a few instances upon the Chiltern Hills, where the land is laid into four-furrow work, or as they are there called, into *little lands*, in which cases the seed is ploughed in.

Seed.—As to quantity, there is but little variation. This rises from two to three bushels, and in some cases more. See Appendix, No. XI. where the average is 2.5245 bushels, *i. e.* 2 bushels 2 pecks and $1\frac{1}{2}$ pint nearly per acre.

Steeping.—This is universally practised with new wheat : not always with old. Mr. Davis, of Cheynics, finds old wheat not steeped better than new wheat steeped : but at Marlow, this year Mr. Webber had a very fair experiment to shew the advantage of the one above the other. The new wheat was brined in the common method ; the old was neither brined nor washed. Half the field was sown with the one, and half with the other, and the whole in one day, without any difference in the cultivation of the land or the manner of putting in the seed : that part on which the new wheat was sown was far better in all stages of its growth throughout the year.

The general method of steeping is to prepare a brine of salt and water strong enough to swim an egg : in this the wheat is steeped, during which time it is stirred well, and the light wheat, and every thing which rises to the top, is skimmed off : the brine is then drained from the wheat, and slaked lime spread upon it sufficient to absorb the moisture hanging about the wheat.

Mr. Smith, bailiff to Mr. Sheppard, of Thornton, steeps his wheat in the foregoing manner by one bushel

at

at a time, which is done at night, and left to drain till the morning.

Mr. Williams, at Horton, instead of brine uses the drain of his farm-yard.

Some farmers use chamber-lic, others mix chamber-lic with salt and water.

Some farmers last year were persuaded to steep their wheat in a preparation of arsenic. One pound of arsenic was boiled in fifteen gallons of water for an hour. The wheat was steeped in this liquor for half an hour, and skimmed. The consequence was, the seed was so much injured that little or no crop was reaped.

The Rev. Mr. Cautley, of Moulsoe, used this steep. Some wheat remained in the steep but a minute or two (indeed, it was only put in and taken out again immediately), and the crop from that seed was very good.

At Brickhill, brine is made of salt and water: the wheat is put into it about three o'clock in the afternoon, and the next morning the brine is let off and lime mixed with the wheat. Mr. Turney's practice is first to wash the wheat in water and take off the scum, then to sift slaked lime and put it into water; so as to form a consistence rather thicker than is necessary for white-washing a room: in this mixture Mr. Turney puts his seed wheat: one bushel of wheat to one gallon of the mixture.

The Rev. Mr. Rush, of Stone, and Mr. Woodman, of the same place, mentioned a singular method of steeping wheat, which they said Mr. Chandler, of Dynton, uses as well as themselves. It is this: first, they wash the seed well in water, and skim it well, and lay a heap of about two bushels so washed upon the ground.

In the middle of this heap they set a bucket of
N 2 boiling

boiling water containing three or four gallons, into which they throw lime by the hand in small quantities until it boils over, and in about seven or eight minutes pour the water and the lime over the wheat, and stir it altogether. They let the wheat remain thus for a night, or longer, and then sow it.

Sort.—The red *Laminas*, called also *Burwell* wheat, because the best is grown at *Burwell*, in *Cambridgeshire*, whither farmers go to buy the seed, is the most prevalent. Upon the *Chiltern Hills* many farmers grow a white wheat, which they call *Chetham* wheat: they have also white cone wheat. These white wheats are very saleable at *Uxbridge*: the accounts, however, in this respect differed.

The *Rev. Mr. Rush*, and *Mr. Woodman*, of *Stone*, had this year crops of *American spring wheat*. In *June* they appeared bad, and likely to be very unproductive. *Mr. Rush* reports thus: "with regard to my *American wheat*, which you advised me to cut down for horses, the part which was not blighted produced between five and six sacks to the acre, a very handsome sample; and the other, which was so, did not turn out so bad as I expected, neither in quality nor quantity." *Mr. Woodman*, says, "as to the *American wheat*, I have but few words to say upon it, which are a general sentence of condemnation in the instances of its being sown in our neighbourhood: it uniformly failed, and was found previous to its blossoming exactly in the state in which you saw it, affected and completely covered with a yellow blight or dust. Soon after this it became infested with a small maggot and a fly, which so far preyed upon and injured it, that it became scarcely worth the expense of harvesting. It certainly happened,

happened, that the first land (ridge) of my other wheat growing next to the American wheat, was partially affected by it.

Depth.—As the wheats are almost universally harrowed in, the depth can be but small, and there must be a waste of seed on the account. Experiments in Bucks upon this point might save much seed. The best crop of wheat I ever saw upon my own farm was produced from seed ploughed in by four-furrow work, between five and six inches deep, and the quantity of seed was only five pecks per acre, sown in the beginning of October.

Drilling.—At Aylesbury, at Ashton Clinton, at Brickhill, and a few other places, wheat is drilled by a double barrow drill. Perkins' drill is used at Moulsoe, and in the south of the county there is some drilling, but it is by no means common: but very many acres might be pointed out, where, in order to keep crops clean, notwithstanding a complete fallow preceded, drilling is necessary for the sake of hoeing. It is distressing to a spectator who knows the counteracting effects of drilling in this respect, to see excellent crops overrun with May-weed.

Dibbling.—Is still less common than drilling of wheat. But in one place did I see or hear it was done, and that was at Missenden, by Mr. Shickle, steward to J. Ayton, Esq. who dibbled two acres and a half, a part of a crop. It is much to be lamented, that this instance of dibbling, so rare in this part of England, could not be produced to shew the excellence of this method of putting in seed, because, although it was

really well done, yet in such a situation, which was at the bottom of a field hanging upon a declivity, that the crop, let it have been put in as it would, must have been the best. Had the experiment been made upon ridges up and down the field instead of the bottom (as indeed all the ridges ought to have been placed), it would have been complete, and would have done credit to Mr. Shickle's exertions.

Water-Furrowing—Is too much neglected, particularly in the open-field culture and the heavy lands, where the ridges lie in the fashion of the open-fields.

Hoing—Is not omitted where the wheat is put in by drilling. This, however, occurs but in few places.

Mr. Turney, of Brickhill, rolls his wheat in March, first harrowing it, if it is not too *proud*. He then feeds it off with sheep so late as the 20th of March. At Marlow, and many parts of the Chiltern Hills, farmers roll their wheat crops in the spring.

Feeding.—For want of food in the spring upon the Chiltern Hills, some farmers feed their wheat by sheep, but never, I believe, for the sake of benefiting the crop by it.

Mr. Allen, of Checquers, treads his wheat with sheep as soon as it is sown, and as it comes up; but never feeds unless he wants food for his sheep.

Reaping and Harvesting—Of wheat has no peculiarities in this county; it is generally shorn as early as possible.

Listempers—Are not more prone to crops here than in all other places. A singular instance of Mildew occurred

occurred this year at Hillesden, upon a farm belonging to T. W. Coke, Esq. of Holkham, in Norfolk, and occupied by Mr. A. Lynes, which seems to have been affected by the form of the high ridges. These were the same as have been elsewhere described, about nine yards wide, and raised in the crowns from eighteen to twenty-four inches above the level of the furrows between them. For about three yards upon the crowns, the wheat was laid (or as it is called *lodged*), and there the grain and straw were sound, whilst for three yards on each side of the furrows the wheat stood upright, and was so mildewed, that it could be evidently seen in the stubble after Michaelmas. A few such instances as this would surely influence farmers to level their high ridges, and get rid of the water by other means as well as the furrows.

Smut—Is very prevalent, and universally attempted to be cured by steeping the seed before it is sown.

Stacking—Is every where done upon stables of stone about two feet high, upon which beams are laid crossing each other. Too often the intention is frustrated by the carelessness of servants, who leave harrows or ladders against them, or afford some such means of assisting mice, &c. to enter the stacks; otherwise the stacking is done in such a manner as to preserve the wheat far better than (what farmers covet too much) *barns* would.

Stubbles—Are gathered together, and either stacked or laid in the farm-yards in November. This was one of the first practices noted by me upon entering Bucks; for at Mr. Swannell's, of Filgrave, I passed a

stack of wheat-stubble 50 yards long, three yards wide, and three or four high.

Mr. Kitelee ploughs in the stubble, when a fallow succeeds wheat.

Thrashing.—The price must vary with the season.

Produce.—It is not an easy task to learn this. The following, however, were delivered with apparent sincerity.

At the Brickhills, the produce is three quarters per acre.

At Aylesbury, Mr. Chaplin gets 20 bushels per acre: the appearance of his crop promised three quarters.

At Stone, Mr. Woodman produces from three to five quarters per acre.

Mr. Swannell, of Weston Underwood, somewhat more than three quarters.

Mr. Webber, of Marlow, about three quarters and a half per acre.

At Risborough, Mr. Grace grows cone wheat, and produces four quarters and a half per acre.

About Wycombe and Bradenham, the wheat crops average not more than three quarters. At Checquers, from 20 to 24 bushels. At Chesham, between 25 and 28 bushels. At Cheynies, three quarters.

At Horton, Mr. Williams produces four and five quarters per acre.

Mr. Lovell, at Lee, not three quarters per acre; and his quantity of seed is three bushels.

At Westbury, Mr. Graves gets four quarters and a half and five quarters per acre.

At Thornton, Mr. Sheppard produces three quarters and a half per acre.

At

At Stoke-Goldington, the average produce of wheat is four loads, *i. e.* 20 bushels : at Tyringham, from 30 to 35 bushels.

At Castlethorpe, five loads per acre : at Moulsoe, three quarters.

From these accounts, the average is 28.6 bushels per acre, that is, $28\frac{3}{4}$ bushels. The account in the Appendix No. XI. is 21.266 bushels. From these two, if we take the mean, the average produce of the county is 24.933 bushels ; that is, 24 bushels 3 pecks and $11\frac{1}{2}$ pints nearly.

Total Produce of the County.—By the rotation of crops stated in Sect. 3 of this Chapter, it may be deduced, that, exclusive of the open fields, 67 acres in 312 are sown with wheat ; and by Appendix No. VIII. of the General Report on Enclosures, 90,000 acres remain under open-field culture, of which, I suppose one-third is pasture or common : there will then be in open-field culture, 20,000 acres of wheat*. By our calculation in Chap. 1. Sect. 2, there are in Bucks 177,584 acres of arable land ; from which deduct 60,000 of open-field, lying in fallow, wheat, and beans, and there remain 117,584 acres to be divided into 312 parts, of which we are to take 67 for wheat. The whole number then in wheat is 45250.40993 ; and by the last article in this Section, the average growth is 24.933 bushels per acre : whence the total produce of wheat is 1128028.47078 bushels, or 141,003 $\frac{1}{2}$ quarters, omitting the fraction.

* This is upon supposition, that barley is not cultivated in the open-fields.

Thus :

Thus :

Acres.

5)9.,000	open-field.
<u>30,000</u>	pasture or common.
5)60,000	in fallow, wheat, beans.
<u>20,000</u>	of wheat.

Acres.

177584	arable in Bucks.
<u>60000</u>	open-field culture.

312)117584 to be divided into 312 parts.

	376.87179	each part,
multiply by	<u>67</u>	parts in wheat.
To	25250.40993	of wheat in enclosures,
add	<u>20000</u>	open-fields,

and total number	45250.40993	of acres of wheat,
multiply by	<u>24.933</u>	bushels per acre,

gives 1128028.47078, which divided by 8, the number

of bushels in a qr. gives 141003.55884, the number of qrs. produced;

or 141003½ qrs. omitting the fraction.

Under the head *Seed*, in this Chapter, the average quantity of seed is stated to be 2.5245 bushels per acre. Now the number of acres sown is 45250.40993; and therefore the total quantity of wheat used for seed is 114234.65986 bushels, or 14,280 quarters nearly. Deduct this from the number of quarters produced, and there remain nearly 126,725 quarters for consumption.

SECT. V.—RYE,

Is not grown in Bucks.

SECT. VI.—BARLEY.

In this Section, our enquiries will be confined to the following heads in succession :

1. Tillage.
2. Manuring.
3. Putting in.
4. Quantity of Seed, and Produce.
5. Malt.
6. Beer.

Tillage.—Barley is sown after turnips upon cloverleys, upon complete fallows after beans, and after a corn crop (wheat).

Some farmers plough once before Christmas ; and in the spring sow broad-cast upon that earth, and harrow in the seed : others follow that ploughing by two in the spring.

Mr. Sheppard, of Thornton, ploughs once before Christmas. In the spring, he sows half the seed upon that earth ; then he scarifies the land ; then sows again the remaining half of the seed, and then harrows it in. Such tillage is the means of having very clean stubbles.

At Brickhill, Mr. Turney ploughs but once for barley, unless the weather is wet, in which case he gives two ploughings.

At

At Wendover, upon the chalky bleak hills, Mr. Forster sows barley immediately upon one ploughing, after turnips, in the middle of May.

Mr. Ayton's bailiff, at Missenden, after turnips fed off by sheep, ploughs for barley three times, according to the Norfolk system; the second and third ploughings following each other as quick as possible.

It is too much the practice to grow barley after wheat, by one ploughing before Christmas, called a *grattening*.

Some farmers sow turnips upon the wheat-stubble, which they feed off with sheep; and then upon one ploughing, sow barley.

Manuring.—Seldom is a crop of barley sown without some kind of manure, from sheep, from the farm-yard, from ashes, or from rabbits'-dung, or otherwise.

Mr. Chaplin, of Aylesbury, uses all these: he finds sheep's-dung best; then farm-yard dung; next ashes; and last of all, rabbits'-dung, sown broad-cast, 48 bushels per acre, as a top-dressing for the barley just as it is springing up.

Mr. Heath, of Wycombe, manures also with malt-dust, bought at 4s. and 4s. 6d. per sack, of which he sets on ten sacks per acre, sows it broad-cast, and harrows it in with the barley. Its effect is great, both in the barley and the clover crop.

Mr. Woodman, of Stone, manured a pea-stubble for barley; but the crop was, notwithstanding, not so good as after turnips.

Mr. Ayton's bailiff, at Missenden, manures for barley only by feeding his turnips with sheep, according to the Norfolk system.

Oil-

Oil-cake, given to sheep whilst they are feeding upon land, has great effect upon the succeeding barley crop. At Mr. Pope's, of Chesham, it was discernible to an inch upon the barley crop, where his sheep had been fed with oil-cake during the time of their feeding the turnips. The sheep had each half a cake every day.

Mr. Lovell, of Lee, has used rabbits'-dung for barley; but found no benefit from it, and rather thinks it injurious to the clover.

Putting in.—This is done by drilling, in a few instances, upon one earth; by sowing broad-cast, and harrowing in; but in most instances, by ploughing in half the seed, and harrowing in the other half.

The names of those gentlemen have been mentioned who drill: their general practice is, not to sow clover and grass-seeds until they have hoed the barley once.

Mr. Turney, of Brickhill, drills barley in rows at 10 and 12 inches apart; but he thinks the best crops are produced from the twelve-inch distance. He had 25 quarters from nine bushels of seed, so drilled upon three acres and a half. The barley was hoed twice, and then the clover and grass-seeds were sown. Mr. Turney says, however, that the clover crop was not so good as upon broad-cast barley. Mr. Turney says, the best and most regular crops are those which are sown half under furrow and half above.

Mr. Ayton's bailiff pursues the Norfolk method, of sowing and ploughing in the seed by small furrows, with two horses a-breast. It would be highly gratifying to see him pursuing Norfolk courses more closely, particularly in the manner of ploughing in barley with one horse in a light swing plough, or that with wheels.

The

The custom of the county is, to plough in barley with at least three horses at length, and that upon as fine tilths as can be seen in those counties where only one horse in a plough is thought necessary for such work.

Quantity of Seed and Produce.—The quantity of seed is from three to six bushels, generally four. See Appendix No. XI.

At Risborough the crops after turnips produce 5 or 6 qrs. per acre.

At Stone, Mr. Woodman gets from 5 to 8 qrs. per acre.

In the neighbourhood of Wycōmbe and Bradenham the crops average $5\frac{1}{2}$ qrs. per acre.

At Stoke-Goldington the quantity of seed is four bushels, and the produce 4 qrs. : the time of sowing is the latter end of March and the beginning of April.

At Olney the quantity sown is four bushels, and the produce after turnips 5 or 6 qrs. per acre, but after wheat not more than $3\frac{1}{2}$ qrs.

Mr. Forster, at Wendover, sows 4 bushels, and reaps 5 qrs.

Mr. Ayton's bailiff finishes barley sowing by May-day : he sows 4 bushels, and reaps 6 qrs. per acre.

Mr. Davis, of Cheynies, sows 3 bushels, and gets about 5 qrs.

At Eddlesborough barley produces $4\frac{1}{2}$ qrs. per acre.

At Checquers, 5 qrs.

Mr. Williams, at Horton, drills $2\frac{1}{2}$ bushels per acre, and gets 6 and 7 qrs.

At Moulsoe the crops are five or six qrs. upon fallows, and not more than $3\frac{1}{2}$ qrs. after turnips.

At Tyingham barley crops yield from 7 to 10 qrs. per acre.

At

At Castlethorpe, 5 qrs. per acre.

But few instances occur of *drilling* barley, but where they do, they shew clearly the advantage upon light lands and loams which admit the hoe.

The average quantity of seed sown by the above account is 3.5833 bushels per acre: by Appendix No. XI. it is 4.09788, of which two the mean is 3.84059 bushels per acre.

The average produce of the above account is 44.73 bushels per acre; but by Appendix No. XI. we find it 30.62365 bushels, from which two we get 37.6768 bushels per acre as the average produce.

Total Produce of Barley.—Pursuing the method adopted in estimating the total produce of wheat in this county, and supposing that in the open-field culture no barley is grown, we shall have in enclosures about 52 acres in 312, barley. Therefore we have to divide 117584 by 312, as before, and to take 52 of them: this will give us 19597.33308 acres of barley. From whence, as by the last article, the average of seed is 3.84059 bushels per acre, the total quantity of seed is 75265.3214537172, and as the average produce is 37.6768 bushels, the total produce will be 738964.798988544, from which subtract* the seed, and there remain 663099.4775348268 bushels, for consumption, or omitting fractions, nearly 82888 qrs. of barley.

* It would have been a shorter process to have subtracted the average seed per acre, 3.84059 bushels from the average produce per acre, 37.6768, and then have multiplied the number of acres of barley 19597.33308 by that remainder, and the result would have been the same, viz. nearly 82888 qrs.: but then the whole quantity of seed sown would not have appeared.

Malt.—Mr. Heather, of Marlow, gets from 20 qrs. of barley, 22 qrs. of malt. Mr. Bailey, steward to Dr. De Salis, of Wing, gets the same: but Mr. Smith, steward to Mr. Sheppard, of Thornton, who sends barley to be made into malt at 5s. per qr. besides the duty, and who has it pale and dry, has no increase, leaving out the refuse of the screening: after the malt has lain in the bin for six months, it increases about one-ninth in bulk.

In this article consists the great importance of barley to the public; for from the manufacture of barley the revenue receives 3*l*s. 8*d*. for every quarter of malt produced.

In this county 90,000 acres remain in open-field culture; supposing them enclosed, and that 30,000 should continue sward or pasture, there would be 60,000 to be cultivated, so that in all probability 12,000 would annually produce barley, and add (if we only suppose 4½ qrs. per acre, the produce) 49,000 qrs. of barley to the present produce, and the revenue loses for want of enclosure more than 50,000*l*. annually.

Beer.—No where is more care taken in brewing. Every farmer makes a point of keeping good beer; and next to the dairy, the cellar is the best room in his house. The general practice is to brew twice in a year, viz. in November and March, and not to broach a vessel in less time than a twelvemonth. As the beer in general, in the county, is very good, the particular mode of brewing it shall be given.

Without mentioning particular names, it may be sufficient for the purpose to state, that the different proportions of ingredients used were these:

Some

many crops could not yield more than 2 qrs. and yet in those cases they followed wheat sown upon a fallow. Some farmers had deviated from the general practice, and sown clover, much to their own advantage.

Tillage.—The common tillage is once ploughing : a few plough three times, particularly for white oats. Mr. Davis, of Cheynics, does this : after the first ploughing he harrows, then lays the land into two furrows by cross-ploughing it : this is harrowed, and with the next earth the oats are sown.

Mr. Sheppard, of Thornton, breaks up his wheat stubbles as soon as the stubbles are raked and carried off, by a clean and deep ploughing. In the spring he scarifies the land once, then sows the oats broad-cast, and harrows them in.

Time.—This varies much. At Brickhill, Mr. Turney sows in May. At Wendover Mr. Forster sows in the middle of March.

Sorts.—These were Tartarian, Dutch, black Poland, and white, and the potatoe oat.

Preparation, Seed, and Produce.—The common preparation, if such a term may be used, is a wheat crop, upon the stubble of which, after one ploughing, four bushels of seed are sown, and the produce is 4 qrs. per acre. Such was the case at Cheynics and Chesham.

Mr. Davis sometimes gets 5 qrs. per acre.

At Wycombe and Bradenham, in this instance the crop is not more $4\frac{1}{2}$ qrs. ; at Brickhill 5 qrs.

At Checquers oats are grown upon clover leys once ploughed,

ploughed, four bushels of seed are sown, and the produce is $5\frac{1}{2}$ qrs. per acre.

Mr. Turney, of Brickhill, sows oats after turnips, and gets 6 qrs. per acre.

E. Hanmer, Esq. at Stockgrove, breaks up his clover leys, and upon one ploughing sows oats four bushels per acre, and gets $5\frac{1}{2}$ qrs.

Mr. Moberley, at Halton, sows oats after beans below the Ikenild way, and above it oats after wheat.

At Lee, Mr. Lovell sows oats after turnips, but upon one farm cannot produce more than 3 or 4 qrs. per acre, whilst upon an adjoining farm, which is dry, he gets sometimes 6 and 8 qrs. Mr. Lovell sows of Tartarian and black Poland oats, five bushels; of white Poland, four bushels; and of the potatoe oat, only three bushels.

Mr. Sheppard, of Thornton, this year after wheat sowed the potatoe oat, which always had been unsuccessful: the seed was sent from Westmoreland, and weighed 45 lb. per bushel. Mr. Sheppard reaps 10 qrs. per acre, and the seed weighs $45\frac{1}{2}$ lb. per bushel. This is the seventh crop of corn within eight years.

At Tyingham the crops of oats are from 7 to 10 qrs. per acre.

It is more difficult to state the total produce of this grain than of wheat and barley, on account of the irregularity of sowing it: as, however, it has been done of the latter, so shall it be of oats. From our own observations, we are inclined to rely entirely upon Appendix No. XI. for the average, and to call that of seed 4.5 bushels per acre, and that of produce 32.8189, although for the latter we are inclined to think the produce greater. The number of acres in the open-fields may be stated to be 5000, that is, one crop in five to

take place in the rotation pursued in the open-fields of fallow, wheat, beans, instead of the beans. Now from the Chapter upon the Rotation of Crops, it seems that about 31 acres in 312 are cropped with oats; whence the number of acres in open-fields and in enclosures will be 16683.02549 acres: therefore the total of seed will be 75072.614705 bushels, and the total produce 547518.545253761 bushels. The difference between which 472444.930518761 bushels, is the quantity produced for consumption, that is, neglecting the fraction, 59056 qrs.

SECT. VIII.—PEASE,

ARE but very rarely grown.

Sorts, and Method of putting in.—The sorts to be met with are the maple, the Marlborough white, the American white, and the horn grey.

Mr. Turney, at Brickhill, drills the early maple pea at 14 in., the Marlborough white at 16 in., and the American large white at 18 in., and takes them after wheat.

Mr. Woodman, at Stone, drills pease in double rows at 16 inch intervals. He also dibbles them.

Mr. Swannell, of Filgrave, if he grows any more pease, intends to drill them where hoeing is necessary.

Mr. Forster, of Wendover, drills pease for the sake of hoeing them and keeping them free from charlocks; but he says, at the bottom of the town of Wendover pease do not succeed: they turn yellow, because the land is too cold.

At

At Aylesbury very few pease are sown. It is said the crop is precarious, to which they also add, that it is often robbed, if good.

They are, when grown, very often mixed with beans. The beans serve as supports for the pease to climb upon, and the pease assist the beans in fertilizing the soil, by overshadowing it.

Seed and Produce.—By Appendix No. XI. it appears that the average of seed sown is 3.45834 bushels per acre, and of produce 24.12766. Now by the observations I made, and the account given in the Chapter upon the Rotation of Crops, supposing, as has been the case before, 117584 acres of enclosed arable, I cannot estimate more than ten acres in 312 with pease, and upon the whole not more than 4000 acres. Whence the total of seed will be 13833.36 bushels, and of produce 96510.64 bushels, and therefore there remain for consumption 82677.28 bushels, or omitting the fraction, 10334 qrs.

SECT. IX.—BEANS.

Soil and Preparation.—Beans are sown upon all soils broad-cast, by drilling and by dibbling: generally upon one earth, and very often mixed with pease: some farmers manure for them. In the open-field culture they follow wheat.

The Drilling.—Is performed by the common double drill of the county, drawn by a horse; or by the single drill attached to the beam of a plough.

Dibbling or Setting.—Is done in an expensive man-

ner by a man, who with one hand makes a hole in the flag as a gardener does, and drops the beans with his other: the price of dibbling is by the bushels of seed sown. Mr. Langton, at Cippenham Court, pays 6*d.* per peck, and dibbles a sack to an acre.

Hoeing.—Farmers have three ways of hoeing beans, viz. by the horse-hoe*, and by turning in sheep to feed the weeds.

Mr. Woodman, of Stone, drills beans at 16 in. and hand-hoes them: the price of hoeing varies from 4*s.* 6*d.* to 12*s.* per acre.

Mr. Allen, of Checquers, dibbles beans and pease together.

Mr. Swannell, of Weston Underwood, sows beans broad-cast, and also dibbles them.

Mr. Swannell, of Filgrave, sets† beans, and hoes them twice at 8*s.* per acre.

Mr. Graves, of Westbury, drills beans by the barrow drill.

Mr. Cox, of Beachingdon, in Waddesdon, drills, dibbles, and sows beans broad-cast after wheat.

Mr. Chandler, of Dynton, sows beans upon a fallow. This is a practice rarely pursued in Bucks. It is a practice to be recommended, and when more generally understood, will be more generally pursued.

Mr. Forster, of Wendover, never mixes pease with beans, because he weeds them by sheep. He grows beans in the vale at Wendover, but not upon the hills.

Mr. Foulter, of Amersham, manures for beans, and sets them in rows at 12 or 13 inches apart, for the sake of hoeing them.

* See one in Chap. V.

† *Setting* means the same as *dibbling*.

Mr. Hanmer, of Stock-grove, dibbles beans, sometimes upon tempered land as well as upon the flag.

Mr. Turney, of Brickhill, manures for beans, and drills them at 15 inches. His neighbours sow them broad-cast. Mr. Turney sows them after wheat, and sometimes upon a clover-ley, as a preparatory crop before wheat.

At Wing, beans are sown after wheat, upon heavy lands; some drilled, some dibbled, and some broad-cast: the weeds are sheep-fed.

Mr. Chaplin, of Aylesbury, sometimes drills beans after barley. He first hoes them with the horse-hoe, and then by hand.

Mr. Moberley, of Halton, sets or drills beans, and sometimes pease and beans together, and hoes them at 4s. per acre each time.

Straw—Of beans is used as horse-food in winter.

Seed and Produce.—When pease and beans are mixed, the proportion of seed is one of pease to three or four of beans—in all, four bushels per acre.

Mr. Moberley mixes one of pease to three of beans, and sows four bushels per acre.

Mr. Swannell sets two bushels per acre, but sows four.

Mr. Hayward sows of the tick bean, four bushels and four bushels and a half per acre, and produces about two quarters and a half.

Mr. Graves, of Westbury, sows five bushels per acre.

At Wing, five bushels are used for seed: at Aylesbury, four.

At Moulsoe, beans yield three quarters per acre, and 25 bushels: pease and beans mixed, the same.

At Aylesbury, Mr. Smith sets four bushels, but sows five, and reaps three quarters and a half: of beans and pease mixed, the produce is three quarters and a half.

The minutes here given of the quantity of seed and produce are but few, but they are general; and I am inclined to pay at least as much credit to them, as to the Appendix No. XI. By my own statement, the average of seed is 4.16 bushels, and by the Appendix it is 4.1; the mean between which is 4.14, which I state as the general quantity of seed used. In the same manner of produce, my notes give 24.25 as the average; but the Appendix gives 23.562: therefore I take the mean, 23.916 bushels, as the average of produce. Now in the open-field culture, there are 60,000 acres in fallow, wheat, beans; whence 20,000 are in beans: and in the enclosed fields, by the statement of the rotation of crops, there are 30 acres in 312 in beans; whence, dividing 117,584, as before, into 312 parts, and taking 30 parts, we have the total number of acres in beans, 31306.1537: the total quantity of seed is therefore 128607.476318 bushels, and the total quantity of produce is 688717.9718892 bushels; from which deduct the seed, and there remain 560110.4955712 bushels for consumption, or, omitting the fraction, 70,013 qrs.

SECT. X.—TARES,

Are grown for horses and sheep; for soiling in the one case, and feeding in the other: sheep either feed them upon the ground, or they have portions mown for them, and given to them, so that the land may have equal portions of their dung.

Tares

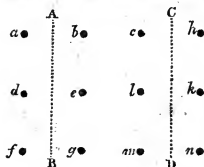
Tares are sown upon arable land in three ways: first, upon heavy land, upon a fallow for wheat, when they have the power of fertilizing the soil by overshadowing it; and next upon a wheat-stubble, to be followed in the succeeding year by turnips, or a crop of corn; or thirdly, to be fed or mown, and carried off by the next June, so as to admit a crop of cabbages or turnips in the same year. At Stoke-Goldington, tares are sown about once in ten years instead of clover; in which case, after having been fed with sheep, they are ploughed in, to be succeeded by wheat. To these instances of sowing tares, I desire to recommend another, which is, that of supplying vacant places of clover by dibbling tares, and particularly, to use *spring* tares—a practice which is very often pursued with much success by Mr. Salter, who occupies a heavy-land farm at Whinberg, in Norfolk, belonging to Sir W. Clayton, of Marlow.

Having stated the different ways in which tares are grown upon arable land, it now becomes necessary to shew how they may be grown with success upon pasture and meadow. Instances of this practice occurred this year, and have been pursued before, upon farms at Hillesden and Cowley, belonging to T. W. Coke, Esq. of Holkham, in Norfolk, in imitation of the system first adopted by Mr. Salter, just now mentioned.

Mr. Salter's method, which he pursues systematically upon meadows and pastures that want improvement, is, to feed them as bare as possible; then in the spring, about April, or later, to dibble* two bushels of tares
per

* *Dibbling* is practised in Norfolk and Suffolk in a manner far different, and far superior, to any practice of the kind in Bucks. The want of women and children in many parts of Bucks, or rather, the impossibility
of

per acre, either alone, or mixed with pease, in holes about four inches apart from each other, thus :



a b is four inches, *b c* is four inches, and so on : *a d* is four inches, *d f* four inches, and so on. But the manner of doing it is by a man walking backwards, and striking two holes at a time with a dibble in each hand : thus he walks backwards from *A* towards *B* ; and going along the line *A B* (dotted for the purpose of making the description intelligible), he first strikes* the two holes *a b*, then the two *d e*, and by habit gains the proper distances. After finishing a certain distance, he goes to the top *C*, and walks backwards towards *D*, striking, as before, two holes *c h*, then *l k*, then *m n*, and so on. As soon as the man has struck the first two holes, a child follows with the tares, and drops them into the holes. Each man with a pair of dibbles can

of enticing them into the field, will prevent the Norfolk method from being introduced; unless the Rev. W. A. Barker, of Woodbridge, in Suffolk, shall put it into the power of the country to use either of his new-invented dibbles, shewn last year and the preceding at Holkham, and so much approved of.

* At the moment of striking the hole, a man turns his wrist nearly half round horizontally, in order to prevent the soil from sticking upon the dibble.

employ

employ three children, called *droppers*. When this process of dibbling is finished throughout the pasture or meadow, or as soon as the dibbling is advanced far enough, so that the teams may not be stopped, Mr. Salter sets on mould, or any scrapings he can get together, from 12 to 20 cart-loads, or more, which he spreads, and makes as fine by the harrows and roll as he can. Upon such parts of the pasture as will grow oats, Mr. Salter sows them broad-cast upon the mould already spread, where it is thick enough: then he harrows again. He then sows of ray-grass*, two bushels at least, and eight or nine pounds of Dutch clover per acre, and brushes them in with a pair of harrows, or a gate bushed. In imitation of this method of growing tares, Mr. Morris last year dibbled tares upon 20 acres of pasture, which had been banked† in the preceding autumn.

SECT. XI. AND XII.—LENTILS AND BUCK-WHEAT.

Mr. Forster, of Wendover, used to grow lentils; but he has discontinued the practice for several years. Little or no buck-wheat is grown.

* Cocksfoot-grass should be added.—S. J. P.

† See this further noticed in Chap. VIII.

SECT. XIII.—TURNIPS.

SOIL.—The soil of the arable farms in Bucks is generally adapted to turnips: not so upon the heavy clayey lands, where the dairy-farms abound. Turnips, however, might be grown to much advantage in many parts, where they are entirely neglected. By under-draining, and repeated and seasonable ploughings, the heaviest lands may be reduced to a fine tilth, and turnips sown: and in such cases, the only caution necessary is, to guard against the ill effects of carting over the lands, or of feeding sheep upon them at improper times. The ill effects of the wheels of carts, and of the treading of horses, may be avoided, by sowing the turnips upon flat work* in rows (not drilling), and in the month of November by earthing them up with a double-breasted plough. By this process, the wheels of the cart and the treading of horses will, if proper caution has been taken in the sowing, be upon the steril soil in the furrows formed by the plough. By this method of earthing up turnips, I have been able, upon heavy land, to sow barley early in the spring, after once ploughing only.

Tillage.—The lands intended for turnips are generally ploughed once before Christmas, and clean, as it

* Upon heavy land, I have sown turnips in two rows upon four-furrow work, and in November have, by a double-breasted plough going upon the crowns of the ridges, covered the turnips with mould, and thus rendered the means of carting off the turnips easy and without bad effect, and preserved the turnips themselves from the injury of frosts. My turnip-sower is given in Chap. V.

is called ; but see the error pointed out in page 145. A few farmers two-furrow their lands before Christmas : in the spring they plough again, and repeat it without harrowing. By this rare use of the harrows, lands are not so clean as they ought to be. See the article *Tillage*, Chap. VII. Sect. 1.

Mr. Freeman, of Fawley Court, follows the Northumberland method of laying the land into two-furrow work : this doubles the staple of the soil, and is very advantageous upon the Chiltern Hills. The method has been so well explained in Mr. Young's *Farmer's Calendar*, and in other books, that it is not necessary to repeat it here. See also page 144, in the Chapter of *Tillage*—Mr. Forster's method of counteracting the effect of a soil which, after rain, runs together and bakes. Such a practice upon the Chiltern Hills, where there is a mixture of clay and calcareous earth, and which, after rain, forms a crust almost as hard as lime would, is much to be recommended. We must not omit to add, also, that Mr. Forster finds another advantage from this process, which is, that it quickens the vegetation of the turnips, and affords rather a deeper earth for them to strike into. They now grow well, and become a good crop ; whereas, when he used to grow them in flat-work upon such soils, they came to the hoe very slowly, dwindled, and died as soon as their roots began to strike into the chalk.

Manuring.—Mr. Freeman, of Fawley Court, according to the Northumberland plan, lays on all the manure he can for his turnip crop.

Mr. Forster, of Wendover, lays on 12 cart-loads of manure.

Mr. Swannell, of Filgrave, says, the general practice

tice there is, to carry on from 16 to 20 loads of manure.

Sir John Dashwood King had a desire to try, two years ago, the effect of *ploughing* in turnips when they are about the size of an apple, or larger. Part of the field was manured, and set with potatoes; the other part was sown with turnips without manure, and the turnips were ploughed in. The next year (1807) the whole field was sown with parsley, as food for hares, and this year (1808) with wheat. The difference of the crops is very manifest: where the potatoes were planted, the wheat is tolerably good; and where the turnips grew, the wheat is extremely bad, and will scarce pay for reaping.

Mr. Turney, of Brickhill, after the Norfolk fashion, *scales** in the manure with the earth immediately preceding the sowing earth.

Mr. Lovell, of Lee, follows no system as to the rotation of crops; but fallows 40 or 50 acres every year for turnips, upon whatever parts of his farm his judgment directs him. Upon these he lays as much manure as he can, and sometimes buys ashes.

In the neighbourhood of Fenny Stratford, some farmers lay lime upon the fallows for turnips, 13 quarters, of eight bushels to a quarter, upon an acre (which is bought at 3s. 4d. per quarter), and with it 15 loads of farm-yard manure.

Time.—Mr. Turney, of Brickhill, sows turnips so late as the 8th or 10th of August: if he sows them before, the turnips grow too large before Christmas, and

* By *scales*, is meant ploughing very shallow, so as just to cover the manure, and prevent it from losing any of its virtues by evaporation.

mildew.

mildew. If he wants them for fattening sheep, he sows them earlier. The plea here used would be valid, if there was no method of protecting turnips after they are grown to a large size; but if the method, mentioned in this Chapter under the article *Soil*, of sowing turnips in rows, and in the month of November of covering them with earth with a double-breasted plough, were adopted, turnips might be grown to any size, and would receive no injury from that time to the time when they are wanted for use: then they may be ploughed out by the same double-breasted plough with which they were ploughed in. See the article *implements* for the sowing-engine used by myself for this purpose.

Mr. Forster, of Wendover, says, farmers find the best time of sowing turnips is within a fortnight before, and a fortnight after Midsummer.

Drilling.—This practice is very rarely to be seen in Bucks. H. H. Hoare, Esq. of Wavendon, the Rev. Mr. Cautley, of Moulsoe, and Strickland Freeman, Esq. of Fawley Court, are introducing it into their respective neighbourhoods. Such examples will be followed, when it is seen how much a greater weight of turnips may be grown, and, of course, how much more winter stock may be kept.

Sort.—Four sorts of turnips are grown in Bucks: a very few of what are called there Hungarian turnips, but in the Plan of the Reprinted Reports, khol rabi, and are the *brassica gongylodes*, given by Linnaeus as a variety of the *oleracea*. These are grown at Stone by Mr. Woodman, and at Dynton by Mr. Chandler, and are preferred by them to the Swedish: they do not, however,

however, weigh so heavy as Swedes. They are sown in April or May, and transplanted in June. Mr. Forster, of Wendover, sows the tankard turnips, because, he says, they grow the largest: he feeds them off with wethers, which he sells a little after Christmas. The white, round, Norfolk turnip is very common; but the most common is the ruta бага, or Swedes. Some farmers mix the Norfolk and Swedes.

Seed.—This varies from 1 lb. to 2 lb. per acre.

Fly.—To prevent the depredations of the fly, Mr. Forster, of Wendover, sows ten sacks per acre of ashes upon the turnips, as soon as they come up. He does this in a morning, when the turnips have a little dew upon them, and has always been successful. The ashes cost him 2s. per sack. To this preservative may be added, Mr. Forster's method of giving quick vegetation to his turnips, by his process of turning the earth over them, and thus producing fresh evaporation. This is the best of preservatives for turnips in their infant state, for which purpose the tilth cannot be too fine.

For two years past, an implement * has been shewn at the Holkham Meeting, invented by Mr. Paul, of Starston, near Harleston, in Norfolk, which bids fair to enable the farmer to destroy every fly upon his turnip fields. At the first trial of it in June 1807, the inventor, Mr. Paul, caught in a very short time, a large quantity of flies alive, upon a field at Burnham, near

* This implement may be had by application to Mr. Vipond, carpenter, Harleston, Norfolk. I believe the price is about three guineas and a half.

Holkham, where the turnips were just making their appearance: Mr. Coke also shewed some *dead*, in a decanter, for the company present to see, which had been caught some time before. Mr. Paul received from Mr. Coke a handsome piece of plate for the invention. As the implement has not yet been made public, I do not conceive myself at liberty to describe it minutely. It covers a breadth of seven feet, is made of thick Russia cloth, hangs upon a frame of wood-work with two wheels, whose diameters are three feet, and sweeps the flies into a large bag, as it approaches them in its motion upon the surface of the ground: it is with ease pushed forward by a man. A man and boy may clear eight acres per day. Mr. Paul exhibited this implement again at the Holkham Meeting in 1808, when he had made some improvements upon it; but at that time the flies had not made their appearance at Holkham. This fly-catch promises to be a most valuable implement.

Hoeing.—This is done by no means well: too often only once: the consequence is, that charlocks and may-weed, so much complained of by farmers in Bucks, must abound. The Northumberland method of sowing turnips, or that of sowing in rows upon flat-work, would assist the farmer much in his operation of hoeing, because he might apply the horse-hoe. Hand-hoeing is done at a great expense in some places.

At Weston Underwood, Mr. Swannell paid this year (1808) from 8*s.* to 10*s.* per acre, and it was ill done after all.

At Stone, turnip-hoeing varies from 8*s.* to 15*s.* per acre.

BUCKS.]

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At Filgrave, Mr. Swannell paid 6s. per acre for the first time, and 3s. and 4s. for the second.

Consumption.—Very little of the turnip crop is consumed by neat stock, and none of it by milch cows : its general use is for sheep, which are fed upon the land with it by certain portions. That being the case, the farmers in Bucks are not desirous to raise a large weight of turnips per acre. But should the method of ploughing between the rows of turnips be adopted, as stated above, nearly double the weight * per acre might be produced ; half of them be carted off for neat stock in the farm-yard, and as many left upon the land for the consumption of sheep as are now grown there.

Mr. T. and Mr. J. Kitelee, of Castlethorpe, give a few turnips to bullocks upon pastures between November and Christmas, but not after that time.

Mr. Woodman, of Stone, feeds bullocks in the house upon turnips.

Mr. Eagle, of Aylesbury, gives some turnips to bullocks ; and Mr. Chaplin, of the same place, a few to cows.

Mr. Lovell, of Lee, never suffers carts to be driven upon his turnip land. He has borders three yards wide round his fields, upon which the carts are driven, and children with wheel-barrows carry the turnips to them. Surely, in such cases, asses with panniers upon them would answer a good purpose.

* It is very desirable to know the weight of turnips ; for which purpose, weigh 11 yards square in different parts of a field, and take the average, which, multiplied by 40, will give the weight per acre. In Northumberland, turnip crops have weighed between 40 and 50 tons per acre in November.

Modes of Preservation.—The only mode communicated to me of preserving turnips, was at Marlow, by Mr. Heather, and at Eythorpe, by Mr. Currie, who say, that turnips are preserved by carting them off the land, and laying them up in houses.

There are two ways of preserving turnips strongly to be recommended: the one is by the double-breasted plough, mentioned more than once in this Chapter; and the other is by drawing the turnips, and packing them in furrows formed by double-breasted ploughs, either upon the turnip land, or upon the stubbles to be fallowed the succeeding year for turnips, or as convenient to the farmer. These furrows should be cleaned by the spade; and when the turnips are packed in them, they should be covered with mould. I have practised both these ways with success, and have found a reserve of turnips for ewes and lambs, at a time when other farmers have finished their crops. When I cart off the turnips from the turnip land, to be preserved in a field convenient for my ewes and lambs, I order the cart to be driven along the furrows of the turnip land, as waggons are in Bucks, when they are carrying off the clover-hay, &c. and the turnips to be picked; *i. e.* the best to be carried off, and the remaining turnips left to be fed by sheep. Curiosity has induced me to weigh pieces taken from the middle of turnips *protected*, as in the first instance, upon the turnip land by the double-breasted plough; and *preserved*, as in the second, by being packed in furrows. I find little or no difference exists between the *protected* and *preserved*; but between either of these and *unprotected* turnips, that is, turnips growing in their natural state upon the surface of the ground, without being enveloped in earth, there is a great difference. The Rev.

T. C. Munnings, whose communications upon this subject to the Society of Arts, &c. were published in their Transactions, informs me, that he has found the average proportion of the weights of unprotected and protected turnips to be as seven to nine; whence two-ninths of the weight of a crop are saved by protection.

In November 1802, I preserved many turnips, and only protected others. In February 1803, I took cubes of two inches from the middle of them, and weighed them; the weights were as under:

	<i>Cx.</i>	<i>D.</i>	<i>S.</i>	<i>G.</i>
The weight of a cubic two inches from the middle of a <i>preserved</i> turnip was	3	6	0	0
That of a <i>protected</i> turnip,	3	7	0	5
I then took a cube of two inches from the middle of a turnip sown broad-cast, neither preserved nor protected, and found its weight to be	3	5	1	1

These turnips all grew in the same field, and were cultivated in the same manner.

	<i>D.</i>	<i>S.</i>	<i>G.</i>
The advantage by preserving was in weight,	0	1	19
And by protecting,	1	2	4

Upon a second trial, I found the excess of the weight of a cubic two inches of a preserved turnip, above that of a turnip not preserved, was	2	1	6
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At another time, from a different field, I took as above, and found,

	<i>Cx.</i>	<i>D.</i>	<i>S.</i>	<i>G.</i>
The weight of a cube of preserved turnip,	3	3	1	13
And that unpreserved,	3	0	0	18

In this case, the excess was

By

By these trials it appears, that little more than one ton and a half per acre is saved in weight by preserving or protecting turnips ; but it is to be observed, that in this case, no account is taken of turnips entirely destroyed. The above is only a comparative statement of the weights of turnips *preserved* or *protected*, of which none are ever destroyed by winter ; and of turnips not destroyed by winter, although neither preserved nor protected. Taking into consideration the number of turnips rotten, at or before the middle of March, and the balance in favour of preserving turnips is great, and to those who want them as spring food, inestimable. One more remark must be made, which is, that turnips enveloped in earth are preserved as well as any art can effect it, and, by the following fact, better. Upon the farm at Gorgate, in Dereham, belonging to the Rev. T. C. Munnings, we weighed, on the 9th of February, 1808, a bushel skep of preserved turnips : their weight was 75 lb. Immediately after, we weighed the same quantity of turnips sown late in August after vetches : these turnips were buried and enveloped in earth, and their weight was 82 lb.

SECT. XIV. AND XV.—COLESEED AND CABBAGES.

COLESEED, or rape, is not grown in this county, notwithstanding the many places where much advantage might be made of it. See the Appendix No. IX. where Mr. Parkinson has given a calculation of what he thinks may be gained by it.

At Stoke-Goldington, coleseed is grown, and fed off with sheep in the spring.

Cabbages are grown by very few. Mr. Kitelee, at Castlethorpe, plants them after vetches: so does Mr. Chandler, at Dynton. Upon the heavy lands in Bucks they would succeed well upon the fallows, enable the farmers to keep more winter stock, improve the fertility of the soil, and be the means of cleaning the fallows. Mr. Swannell, of Weston Underwood, grows the drum-head cabbage, and plants them in rows $2\frac{1}{2}$ feet distant from each other. The use of the horse-hoe between these rows leaves the land in a fine state for the succeeding crop.

SECT. XVI.—RUTA BAGA, OR SWEDES.

HAVING already mentioned this plant under the article Turnips, and given the tillage, we shall have the less need to be diffuse under this head. Farmers in Bucks are not desirous of a large bulk of turnips, because they seldom give them to any other stock but sheep, and they want them in the spring. Swedes, therefore, answer their purpose well. Indeed, few plants exceed this in value for feeding any stock.

Mr. Westcar, of Kreslow, feeds his horses upon Swedish turnips, and thinks much advantage arises from it. He sows them in June.

Mr. Swannell, of Filgrave, sows Swedes so as to finish about the 25th or 26th of June. He cuts a few for bullocks, if his hay does not last out the season. Pigs fatten quickly upon Swedes, and pay well. Mr. Swannell gives 7s. per acre for hocking Swedes.

Mr. Forster, at Wendover, grows Swedes. He says
they

they were so serviceable last spring (1808), that they must gain ground. He prefers the yellow sort.

At Checquers, Mr. Allen sows Swedes at the latter end of May and beginning of June.

The Earl of Bridgewater, at Ashridge, and H. H. Hoare, Esq. at Wavendon, grow Swedes upon the Northumberland plan. At Ashridge the first sowing was in the middle of May, but the crop was entirely destroyed by the fly. The second sowing took place in the last week of May and beginning of June, and has proved a very good crop.

Mr. Ayton's bailiff objects to this plant, except in a small proportion of the whole turnip crop. Being obliged to sow them early, viz. by the latter end of May, he says the land is not sufficiently cleaned and tempered for a fallow.

Total Quantity of Turnips, Cabbages, &c.—In conformity with the plan hitherto adopted, of summing up the total produce of each article of consumption, we give the quantity of turnips. By consulting the Chapter of the Rotation of Crops, and deducting 60,000 acres in open-fields, upon which no turnips are grown, we find that of 111141* acres arable, 36 in 312 are sown with turnips. Whence omitting fractions, we have about 11497 acres of turnips and cabbages: these properly cultivated ought to weigh in November at least 25 tons per acre, and upon an average of seasons, in the February following, about 20 tons. The Northumberland plan would produce more weight in November, and the method of sowing in rows upon

* We compute here the number of acres upon the arable farms and farms of a mixed nature, omitting the arable parts of the dairy farms.

flat work, and then protecting or preserving them, would produce not so much weight as the Northumberland in November, but whatever that weight was in November, it would remain the same in February and late in the spring, notwithstanding any severity of season. The same cannot be said of the Northumberland plan, because the turnips are more exposed, being sown upon raised lands or two-furrow work.

SECT. XVII. XVIII. XIX.—TURNIP CABBAGE, KHOL RABI, BOORCOLE, &c.

OF these plants only khol rabi* is grown, and that in very small quantities, by Mr. Woodman, of Stone, and Mr. Chandler, of Dynton. The seed is sown in April or May, and the plants are drawn and transplanted in June, in rows at 20 inches from each other: these beds or ridges may be easily formed by a double-breasted plough, and the manure either spread over the field or laid in according to the Northumberland plan. Swedes may be cultivated in the same manner with success.

Mr. Chandler prefers the khol rabi.

Mr. Woodman feeds his bullocks with these turnips. I carried one of them, and in the presence of Mr. Smith, of Aylesbury, weighed it against a Swede of the same circumference, but the weight of the Swede was much greater. Those who cultivate these plants should weigh them one sort against another in Novem-

* See Sect. 13, of this Chap. Article *Sert.*

ber, and again in the spring. Mr. Woodman has favoured me with a letter upon this subject, which, as it is interesting, and does him credit, I shall take the liberty to lay before the Board. "Many farmers will object to the khol rabi as a plant of expensive culture; the ground must not only be highly manured, but the plants transplanted, and when done, perhaps it may be said, so many plants cannot be grown per acre as of the Swede or common Norfolk turnip. This I take fully into the account, and yet from the knowledge derived from my own experiments, and from what I have seen of Mr. Chandler's, whose crop was infinitely better than by own, I remain sanguine in their favour, conceiving that they may be grown to advantage for oxen: I can state with confidence, that oxen are extremely fond of them, insomuch, that two of the eight which you saw feeding upon the khol rabi, when put to Swedes, refused them. The peculiar circumstance of their growing entirely above the surface of the ground, renders them particularly eligible for pulling them, and carrying them off the land. On light soils they may be pulled up, and on heavy soils cut off by a sharp spade or other instrument. Mr. Chandler grows them upon heavy land, and to avoid the trouble of washing or cleaning them, his servant chops them off by a sharp *banking* hoe. This must be a good method, as the withered part of the top may first be chopped off and remain with the root as manure for the ground. The first point in the process of cultivating this plant, is to manure a seed bed near to the land upon which they are to be planted, on which the seed should be sown sometimes in March. At the latter end of May your crop may be transplanted on ridges or a plain surface, in rows at the distance of $3\frac{1}{2}$ feet: I have no doubt

doubt but that the khol rabi, properly managed, will prove a considerable acquisition to the farmer." I perfectly agree with Mr. Woodman in this account.

SECT. XX.—CARROTS.

No carrots are grown in Bucks: they might, however, claim attention on the sandy soils of the Brick-hills, as well as some of the loams in the north of the county.

Last year I weighed the produce of a large field of carrots without their tops, belonging to Mr. Burrows, of Witchingham, in Norfolk. We fixed upon two spots, which appeared to be the average of the best and the worst, and the weight of eleven yards square was in the one instance 1054 lbs., and in the other 714 lbs.; the average of which is 1768 lb.: multiply this by 40, and the produce was 35360 lbs. per acre, *i. e.* 15 tons 15 cwt. 5 stone 10 lb. By measure, this crop of carrots amounted to 760* bushels.

Carrots should be hoed early and cautiously. This is expensive, but if land be rich and proper for them, the crop will answer the expense. Mr. Turney, of Brickhill, is trying them now upon a piece of land which he has trench-ploughed.

* Mr. Burrows has grown this year (1808) more in weight and measure per acre, and uses them to much advantage in feeding horses. Horses thus fed require no corn.

SECT. XXI. XXII. XXIII.—PARSNIPS, BEETS, POTATOES.

PARSNIPS.—The Rev. Dr. De Salis, of Wing, has cultivated parsnips so successfully, as to have been honoured with a medal by the Society of Arts on that account, in whose Transactions the particulars of his experiments have been published. At present no parsnips are grown.

Beets.—Beets are no where cultivated in Bucks. That species of beet known commonly by the names of *the root of scarcity* and *mangel-wurzel*, grown at Burnham, in Norfolk, with success, by Sir Mordaunt Martin, and in Hertfordshire by the Marchioness of Salisbury, is well worthy of trial upon the sandy soils of the Brickhills. Sir Mordaunt Martin recommends *mangel-wurzel*, “particularly upon dry soils, on account of its succulent nature, being peculiarly adapted to counteract the effects of Midsummer droughts: in such a season, Sir Mordaunt says, every plant which requires moisture in the soil droops. But that *mangel-wurzel* would be good at Midsummer, he doubts not, because when it has been transplanted for seed, it retains so much moisture* after the seed is reaped (which is usually in the last week of harvest), that Sir Mordaunt Martin has known his cattle eat it

* I have seen the same retention of succulency and firmness in the ruta бага, particularly in July of the year 1807, when Mr. Burrows, of Witchingham, showed several to the Norfolk Agricultural Society, upon which he was fattening hogs, after the seed was reaped.

promiscuously with fresh roots late in October. Sir Mordaunt proposes to lay some into open furrows, when he takes them from the stack* in the spring, and to turn a furrow to them on each side, so as to let the loose mould fall over them, but to leave a space immediately above the plants open, sufficient to receive long dung to be spread in it for the purpose of preventing hares from biting the heads of the plants, and of compensating for what the plants may have exhausted of the soil. These rows should be so far asunder, that a cart may pass between them, which spaces may be kept clean by ploughing, scarifying, or hoeing, and of course the land would be ready for turnips, wheat, or tares. The roots may be turned out with a double-breasted plough, or a three-pronged fork." This root may be grown to an incredible size.

Potatoes—Form but a small part of the produce of Bucks: except in gardens, and by the poor on the side of roads, they are but little cultivated.

At Emberton, near Olney, I saw a crop of potatoes planted in rows 20 in. apart, but without any care: the sort was the ox-noble, without manure, and the land extremely foul.

J. Ayton, Esq. of Missenden, grows an acre or two.

Mr. Aymes, of Loudham, near Cheynies, grew some this year in a better manner than is usually practised. The crop appeared promising and clean.

Mr. Davis, of Cheynies, grew potatoes last year, about 400 bushels upon four acres. These he gave to

* The expense of stacking might be saved, and the plants drawn and carried from the ground on which they grow, immediately to the place of preservation, which should be a fallow for turnips or wheat.

twelve milch cows for two or three months in the winter. He neither steamed, boiled, chopped, nor washed them, but strewed them upon the pastures in the same manner as turnips in some counties: hogs also fed with the cows. Mr. Davis says, his cows never were in better health, nor ever gave more milk at that time of the year.

Mr. Lovell, of Lee, grows fifteen or sixteen acres of potatoes, and produces from 300 to 500 bushels.

Four hundred and twenty bushels per acre, weighing $14\frac{1}{2}$ tons, is a good crop of potatoes, and when cultivated according to the Northumberland plan for turnips, and carefully hoed, first by hand, then by the horse-hoe, and then moulded up by the double-breasted plough, they pay well if they can be sold for 1s. a bushel.

Mr. Sheppard, of Thornton, has this year made an experiment to ascertain the propriety of pulling off the blossom of the potatoe. The public will be obliged by his communication* of the result.

SECT. XXIV.—CLOVER,

Is of two sorts for cultivation upon arable land, the *purple* (*trifolium pratense*) and the *Dutch* (*trifolium repens*); a third sort abounds upon pastures, called

* T. Sheppard, Esq. of Thornton, has very obligingly communicated the result in these words: "My friend Mr. Smith's report of potatoes is as follows: half a bushel more and of better quality on *seventeen* poles of ground where the blossoms were cut off, than on *eighteen* poles of ground on which the blossoms remained on the potatoes."

perennial

perennial clover, *cow-grass*, and *marl-grass*. This might be cultivated with success upon the clayey pastures of Bucks. The purple clover is generally sown without any mixture of other seeds upon the barley crop, and in some instances upon wheat crops after a complete fallow.

Manuring.—This is universally practised. In February or March farmers lay about ten sacks, *i. e.* forty bushels, of ashes per acre, which cost at the wharfs 6*d.* or 7*d.* per bushel.

Mr. Woodman, of Stone, uses forty bushels of ashes per acre.

The Rev. Mr. Rush, not more than twenty bushels.

Mr. Forster, at Wendover, lays forty bushels per acre, and buys it at 6*d.* per bushel. Mr. Forster sometimes ashes clover after it has been once mowed, and the effect upon the second crop is very great, and pays well.

Mr. Pope, of Chesham, dresses clover in spring with forty-eight bushels of ashes per acre, which he buys at Cheynics at 7*d.* per bushel.

Mr. Chaplin, of Aylesbury, sows forty-eight bushels of ashes upon clover, which he buys at 8*d.* or 9*d.* per bushel.

J. Ayton, Esq. at Missenden, dresses his clover with forty bushels of ashes per acre.

Mr. Grace, of Princes Risborough, lays 50 bushels of ashes per acre upon clover.

From these instances we see the quantity of manure is variable, but the practice is invariable, where ashes are to be procured from London, and where they are not, some other kind of manure is substituted.

Seed.

Seed.—The quantity of seed varies much. Some farmers think it false economy to be too sparing in this respect, and surely they judge right.

Mr. Woodman, of Stone, sows 9 lb. of red clover* per acre.

Mr. Davis, of Cheynics, from 10 lb. to 12 lb. per acre.

Mr. Taylor, of Marlow, 10 lb. per acre.

Mr. Williams, of Horton, 12 lb. per acre: Mr. Moberley, of Halton, and Mr. Rose, of Upper Winchendon, the same.

Mr. Chaplin, of Aylesbury, 14 lb. per acre; Mr. Graves, of Westbury, and Mr. Turney, of Brickhill, 18 lb.; Mr. Heath, of Wycombe, 20 lb.; Mr. Morris, of Hillesden, 18 lb.

Time.—This is usually as soon as the barley is sown

Mr. Mackie, steward to O. Williams, Esq. of Horton, sows clover broad-cast immediately before he drills the barley; and when the barley is come up, he drills clover: but not more than 12 lb. per acre are sown by the two processes, and rather more broad-cast than by the drill.

Mr. Turney, of Brickhill, sows clover just as the barley is springing up: his neighbours, immediately after sowing barley.

Mr. Smith, steward to Mr. Sheppard, of Thoruton, sows clover and barley together.

Use.—The practice of soiling horses is so prevalent, that some farmers sow no vetches, but cut green clover for them; others make hay of the whole of the first

* Red clover and purple clover are the same.

crop of clover, and feed the second crop by sheep: a few cut both the first and second crop for hay.

Most farmers agree, that the best crops of wheat are got after the two crops of clover have been mown, and made into hay; but some are of opinion, that the second crop thus used is apt to produce slugs, and insects injurious to wheat.

When clover is made into hay, no other care is taken of it but to make it dry. It is neither put into small heaps, called *cocks*, nor into large ones; but after having been scattered about to dry, is raked into long heaps, called *windrows* in some counties, and thus loaded upon waggons, and carried to the stack.

White, or Dutch Clover—Is cultivated two ways: first, it is sown with purple clover, where the land is to continue laid two years, or more; and in the second, when a farmer desires to change the seed, because he suspects a failure of purple clover, on account of the land being tired of it.

Mr. Smith, of Aylesbury, sometimes sows Dutch clover instead of purple; for he says, after four rounds, the purple clover fails.

At Beaconsfield, Mr. Jagger says the usual practice is, to sow half the land intended for clover with purple, and the other half with Dutch clover, and thus to change the seed as the course comes round. Of purple clover they sow 10 lb. per acre, and of Dutch, 6 lb. or 7 lb.

At Stoke-Goldington, Mr. Hayward says, the crops of purple clover do not fail, if they do not return in a shorter time than five years.

Mr. Taylor, of Marlow, sows of purple clover 10 lb. per acre; but when, in his rotation, clover is to be
sown

sown again, he substitutes 6lb. of Dutch clover and 6 lb. of trefoil (*medicago lupulina*) instead of it, to which he adds one bushel of ray-grass to six or seven acres.

Mr. Heath, of Wycombe, sows, in the first instance, 20 lb. of purple clover; and when, in his rotation, clover occurs again, he sows 12lb. of purple clover, 8 lb. of Dutch, and 5 lb. of rib-grass* (*plantago lanceolata*), to which he adds one bushel of ray-grass per acre.

Clover-leys are usually broken up for wheat at one year old; more correctly, at 18 months old: but in case there appears a failure of the clover sown in any year; then the clover-lei continues for two years. One or two instances may be mentioned, where the second crop of clover is ploughed in for wheat.

The produce of clover-hay is from one to two tons per acre.

* This plant is but little cultivated. Upon land which is to remain in grass for more than a year, it is a very useful plant for sheep. When I was upon a visit to the Rev. Dixon Hoste, of Godwick, in Norfolk, in a morning's walk I remarked a large pasture full of this plant, and with very little else, for a large flock of sheep which were there grazing, belonging to a farm adjoining to Mr. Hoste's. This was a two-years' ley, and I thought it an instance of excellent husbandry in the farmer, and therefore called upon him, to inquire how much rib-grass he had sown per acre, and where he had bought it; when, to my utter astonishment, he was perfectly ignorant of having such grass growing, and said, that if he had known it had been in the clover-seed, he would not have bought it. I immediately requested him to go with me, and see the advantage he gained by it. We discovered that it was the most prevalent grass in the field; and that but for it, there would have been very scanty food for the sheep.

SECT. XXV.—TREFOIL,

Is sown with Dutch clover—rarely alone.

Mr. Forster, of Wendover, holds it in high estimation as an *antidote* to red-weed, because he says it keeps a flag, when turned over by the plough, closer and firmer, and, of course, less capable of giving the red-weed an opportunity of vegetating. Mr. Forster grows it alone, that is, without clover; and says, he can grow with advantage a succession of trefoil and wheat upon his chalky hills.

Mr. Hanmer, at Stock Grove, never grows purple clover. He sows 6 lb. of Dutch clover, 4 lb. of trefoil, and one bushel and a half of ray-grass per acre, and produces one ton and a half of hay per acre.

Mr. Allen, of Checquers, harrows in barley, and then rolls it; he then sows 10 lb. of clover, to which he adds 3 or 4 lb. of trefoil, and then harrows again.

Mr. Taylor, of Marlow, sows, as has been mentioned before, 6 lb. of trefoil with clover.

Mr. Heath, of Wycombe, sows 6 lb. or 8 lb. of trefoil with sainfoin.

SECT. XXVI.—RAY-GRASS.

Of late, it has been the fashion to abuse this grass, as *running to natural grasses*, and as *fouling the land*; as if it were possible that, being (as I heard a gentleman once assert it might be) a plant degenerated from rye,

rye*, it might receive a still further metamorphosis, and become a curse to agriculture instead of a blessing. The truth is, that too little care is taken in preventing the seed from being mixed with twitch-grass, and natural grasses not intended to be sown, and that from thence arises an antipathy to it; and no ray-grass but Pacey's is acceptable to a farmer in Bucks, and of this but little is sown.

Mr. Hayward, of Stoke-Goldington, informs me, it is sown there with clover. At Filgrave, also, it is sown; but not upon strong heavy land.

Very little is sown in the neighbourhood of Eythorpe.

Lord Carrington sows Pacey's ray-grass.

Mr. Turney, of Brickhill, sows one peck per acre with clover: Mr. Taylor, of Marlow, and Mr. Heath, of Wycombe, also sow it in small quantities.

SECT. XXVII.—SAINFOIN,

Is grown upon the Chiltern Hills, but is not well spoken of. The general remark is, that it will not stand long: *it dies away*. Those who have experienced the truth of this remark should consider, whether it has not been caused by a non-observance of two rules necessary for the growth of sainfoin: first, that it should always be sown upon land which has a chalky subsoil; and the second, that caution should be used in feeding it with sheep, not to suffer them to feed it

* It is as often written *rye* as *ray* grass.

too close, so as to injure the heart or crown of the plant. No good farmers in Norfolk put old sheep upon sainfoin. The aftermath of sainfoin may be fed by tegs and lambs, to the first week in November.

Mr. Heath, of Wycombe, sows a sack per acre, and reaps two tons and a half of hay.

Mr. Pope, of Chesham, grows sainfoin, but says it will not continue with him longer than eight years: Mr. Taylor, of Marlow, makes the same complaint.

Mr. Allen, of Checquers, says sainfoin is in general disliked, as it will stand only five or six years, and then leaves the land much exhausted.

At Risborough, Mr. Grace says, the crops of sainfoin increase in produce yearly till the fifth year; in the sixth they decline, in the seventh they are worse, and in the next go off almost entirely: he says, also, that the thickest plants go off soonest. If the sainfoin-ley is pared and burnt, a good crop of wheat follows.

Mr. Forster, of Wendover, has grown sainfoin, and sown six bushels per acre; but he says it exhausts the land, and shews a striking instance of it. He says it will grow for five years well, and then *goes off*. The instance Mr. Forster shews, is upon the side of one of the hills at Wendover, where, ten years ago, he sowed sainfoin; part of which he broke up four years ago, and the other part only two years ago. The whole is this year (1808) sown with barley; and the barley is manifestly best, where the sainfoin was broken up four years ago.

Mr. Graves, of Westbury, prevents this evil, by paring and burning the sainfoin-ley when it is to be broken up.

Mr. Davis, of Cheynies, made the same complaint of

of sainfoin, as to its exhausting land, to His Grace the Duke of Bedford, Mr. Coke, and myself; and was advised by Mr. Coke, whenever he broke up a sainfoin-ley, to pare and burn it.

SECT. XXVIII.—LUCERN.

BUT two crops of this most valuable plant were shewn me, in my Survey of this County: one at Fawley Court, belonging to S. Freeman, Esq. whose efforts towards improving the system of agriculture and the management of stock in his neighbourhood, deserve high commendation; and the other at Stone, upon the vicarial farm of the Rev. Mr. Rush. When such gentlemen will either introduce into their neighbourhoods, valuable plants congenial to their soil, or shew an easier and better method of cultivating those already introduced, they may be esteemed as patriots highly deserving the applause of their country. No plant is more valuable than lucern, nor is any more difficult to be raised; and yet, when properly cultivated, may be easily nurtured. From the communications sent to me upon the cultivation of lucern, by excellent practical farmers, the following rules are deduced:

The *soil* for lucern should be a rich loam, and annually supplied with manure.

Of *seed*, not less than 30 lb. per acre should be sown broad-cast, without a crop, with buck-wheat, or with wheat.

If with buck-wheat, it should be mown, so as not to stand for seed.

As to *situation*, the land should be well protected

from the north; and yet not be so warm, as to cause the lucerna to grow too luxuriant very early in the spring.

The harrows should be used as much as possible after every cutting, to destroy all weeds.

In the winter, large cattle should be fed with turnips or other food upon the lucern, until, by their treading, scarce a plant of lucerna can be seen.

SECT. XXIX.—CHICORY,

Is not grown in Bucks: the land is too rich for it. Perhaps between Soulbury and Wavendon some spots might be found, to which it would be an ornament.

SECT. XXX.—BURNET.

Mr. Ward, of Hyde Lodge, near Chesham, grows burnet, without any mixture of grass or clover. Thus grown, it serves as a medicine for sheep.

SECT. XXXI.—HOPS, HEMP, FLAX.

THESE might be grown successfully upon some lands near the Ouse and the Thames, but should be recommended very cautiously.

SECT. XXXII.—LIQUORICE, CHAMOMILE, TEASEL.

NONE of these plants are grown in Bucks. The growth of teasel is superseded in counties where it used to be cultivated, by new inventions in the art of fulling and milling cloth.

SECT. XXXIII.—RHUBARB,

Is grown by the Rev. Dr. De Salis, for his own use.

SECT. XXXIV.—WOAD.

THE method of cultivating this plant, and the advantages to be derived from it, have been so well and so fully explained by A. Young, Esq. in his Survey of Lincolnshire, that it will not be necessary to attempt it here.

At Newport Pagnel, Mr. Ward has lett 25 acres of pasture to Mr. Neale, of Watford, in Northamptonshire, to grow woad for four years successively upon sward, after being, in the first instance, pared and burnt. Mr. Neale brings his own servants with him; and upon a spot of ground near to the land which he hires, he erects a mill-house and mill for bruising the woad, as soon as it is cut and carried from the ground where it grows; and near this house are huts, built of turf and wood, for the families which he brings with

- him. Here they remain as a colony for four years, during which time they look out for another portion of sward land, to be cultivated in the same manner. Much of the woad prepared by Mr. Neale is sent to Norwich.

CHAP. VIII.

GRASS LAND.

SECT. I.—MEADOWS.

THOSE meadows in Bucks which lie along the Ouse and the Thame, both that part of it which runs through the middle of the county, and that which bounds it from Herts, are very liable to floods, which enrich them much : indeed, farmers think the overflowing of these rivers of service sufficient to supersede manure, even though the meadows are mown year after year. Where meadows are not liable to such floods, the general practice is to lay manure upon them, from eight to ten loads per acre of farm-yard dung, and generally immediately after they have been mown ; but some defer it till Christmas, for the sake of feeding them first. Such as have been manured, are bushed and rolled in the spring. It would be well if this bushing and rolling were practised also upon those meadows which are subject to the inundations of the Ouse and the Thame ; for by such processes, the blades of grass would be relieved of the viscous filth upon them, and the soil at their roots benefited. In general, the meadows are fed until the first day of May : they are then rolled, and shut up for mowing.

SECT.

SECT. II. AND III.—PASTURES.

PASTURES in Bucks form a prominent feature in its agriculture: they are numerous, extensive, and though not in general so rich as in some counties, yet very valuable. In the south part of Bucks, and upon the Chiltern Hills, the pasture land is very small in comparison with the arable, but in the rest of the county pastures form large dairy farms, and almost half the farms of a mixed nature, except in the instances of land under open-field culture, where about one-third is sward, as is the case at Stewkley, Bletchley, &c.

State of Pastures.—Of pasture and meadow land (for it is difficult to speak of them separately), some farmers make a point of mowing and feeding alternately, that is, of mowing those parts one year which were fed in the preceding, where meadows will allow it: others keep a certain part for feeding, and always mow the rest. The latter method, without great care, is attended with very bad consequences: for from neglect as to bushing, harrowing, and rolling, or treading properly by sheep, ants form hills in size scarcely to be credited, but by those who have seen them. These hills, called provincially *banks*, are upon an average in some old neglected pastures a yard in length, two feet in breadth, and more than a foot in height, and not only have a most disgraceful appearance, but are really very injurious, as they cause a serious loss to the farmer, for where they exist, they are found not scattered here and there, but nearly as thick as the pasture can hold them from the tops of the ridges to the furrows: for in old
pastures,

pastures, most commonly land lies as upon arable land, in ridges nine or ten yards wide, having the crowns raised nearly two feet above the level of the furrows between them. Perhaps it would not be rating the loss of the farmer too much in such cases to say, he loses two-thirds of the produce by such banks. Besides the evil now stated, another very serious one attends the neglect of pasture lands; for the consequence is, that the furrows of these ridges being the only means of carrying off the water, and being never mown, are many of them filled with rushes, and present a most disgusting appearance to every one who knows the value of a rich grass above a pernicious weed; and yet more than one farmer informed me, that such rushes were valuable, and they should be very loth to exchange them for what others might esteem more productive plants, since such rushes served them instead of straw for their yards.

Banking.—Many farmers cannot be prevailed upon, even though they are offered by their landlords from 5s. to 10s. per acre, as General Paulet's were, to remove such ant-hills. There are, however, two ways practised by some farmers in doing this, which is called *banking*: the one is by cutting the banks entirely off clean from the surface, and carrying them away to form a heap on one side of the field, and there mix with them lime and mould; and the other by what is termed by some *gelding*, by some *skinning*, and by others *gutting* them, that is, by cutting open the sward upon them lengthways and across, and by taking out the mould and the ants, and spreading them about the surface of the pasture, and then laying down the sward again: the latter is the quickest way of producing

ducing a crop of hay for mowing or grass for feeding, but not the most effectual of destroying the ants.

Of the first method of banking, by cutting them off and carrying them away, there were several instances pointed out to me. At Hillesden, upon a farm belonging to T. W. Coke, Esq. some pastures were thus *banked* two years ago, and at present no sward is produced in their room, nor has any care been taken about it.

Upon another farm belonging to the same gentleman, his tenant, Mr. Morris, banked last year twenty acres, as has been mentioned in Chap. VII. Sect. 10, the turf of which banks he burnt, and spread the ashes in the winter upon the crowns of the ridges from which they had been cut. In the spring, without ploughing, he dibbled vetches, and sowed oats, purple and Dutch clover, trefoil and ray-grass, and the produce of hay was about a ton per acre; and there is an appearance of a good herbage springing up. Mr. Morris approves this method of banking better than *skinning*. It is most probable Mr. Morris would have had better success if he had followed Mr. Salter's method more closely, by omitting the oats and purple clover, and by setting on the ashes after the vetches were dibbled, and I may add, by harrowing more. The expense attending this banking was two guineas per acre. *Skimming* them would have cost two guineas and a half per acre.

Mr. Barge, another tenant of Mr. Coke, banked a few acres two or three years ago in the same manner, and upon the crowns of the ridges sowed oats, and reaped a good crop. The next year he sowed upon the same land, without ploughing or scarifying, spring wheat and Dutch clover: the produce was very good, and

and the sward is now restored. This last instance of banking had nearly been attended with very serious consequences, for the land upon which these crops of oats and wheat grew, was tithe free; but as the crops were crops of corn severed from the soil, the parson contended the *modus* was broken, and he had a right to tithe in kind. Upon this question the opinions of persons of high authority were taken, and it seemed to be a very doubtful case; the occupier contending, that as the soil had not been *broken* by the plough, or otherwise, the *modus* still remained good; and the parson, that as the crops had been *severed*, he had a right to his tenth. The best opinions seemed to be, that although the parson *might* have a right to his tenth of that single crop, yet as the *modus* was not broken, it would scarce answer his purpose to be at the expense of bringing the matter to issue, and therefore it was dropped.

Mr. Barge has this year banked ten acres of pasture, and followed it up by Mr. Salter's method of improving meadows in Norfolk.

Mr. King, of Whaddon, banks his pastures before Christmas, by cutting off the banks and carrying them away. Soon after Christmas he sows grass seeds.

Mr. Dover, of Thornton, carries the banks into the hoghole* in his farm-yard, and impregnates them with the drain of the yard.

When banking is performed by paring, too much pains cannot be taken by harrowing, which ought to be performed as often as possible, and if the method of walking and trotting the horses alternately, as used in

* This is a reservoir for the drain of the hog-sty, about six yards long, four yards wide, and one yard deep.

Norfolk, were adopted, the strong cohesive soil under the banks might be better broken, so as to expose it to the chemical impressions of the weather, and prepare it to admit dibbling of tares and sowing of oats in the spring: the banks which were cut off in the autumn should have been well mixed with lime, chalk, or any calcareous earth, and (if possible) farm-yard manure, should now be brought back and spread over the land, in order to fill up the holes made by the dibbles. After this grass seeds should be sown, particularly Dutch clover, ray-grass, and that grass* which prevails so much in every field in Bucks, cock's-foot, and which may be gathered from every hedge-row. These seeds bushed in will produce a fine herbage in the succeeding year.

Many farmers prefer the method of removing banks by *skinning*†, *gelding*, or *gutting* them; for all these terms are used. No one can decide which is the best, except upon a view of the land to be banked.

Last April a field was thus banked between Winslow and Addington, and in the summer a most abundant crop of hay was mown upon it, and the aftermath remaining was extremely valuable. Notwithstanding which, lands below it and around it are lying full of banks, and with rushes growing in the furrows of the ridges.

* Having already mentioned rib-grass as valuable, see the Note in Chap. VII. Sect. 24, it might be expected I should repeat it here; but rib-grass is more proper for sheep.

† In page 236, it is said that *skinning* some banky land at Hillesden would have cost two guineas and a half per acre. Such was the account given, but it is hardly to be credited, that such would be the *average* price of performing this operation: nor have I notes sufficient to give or even conjecture such average.

Mr.

Mr. Watts, of Hanslope, commends the removal of banks by *skinning* them, and then keeping them down by rolling: see the kind of roll which he uses in page 115.

Mr. Hayward, of Stoke-Goldington, never mows the same pasture two years successively. He manures such as have been mown about Christmas, and bushes and rolls them in the spring.

To bushing and rolling should be added abundance of sheep, the treading of which would assist much in keeping down *banks*.

Upon the Chiltern Hills, the bushing and rolling of grass-lands is a very common practice.

At Great Missenden, Mr. Ayton feeds some meadows and mows others: as soon as mown he dresses them with twelve yards of farm-yard manure per acre. Last year (1807) he got twenty tons of meadow hay from ten acres.

Spudding Thistles.—This is a practice full as necessary as banking. It is also called *pecking* them. The *spud* is a small spade fixed to the end of a long handle, to cut off the thistle under the ground, thus:



a b is $2\frac{1}{2}$ in., *b c* $3\frac{1}{2}$ in., and the handle *d e*, 4 ft. long.

Spudding thistles is practised by all the best farmers twice in a year. Some farmers mow them: but no one will hesitate to say which is the best practice, after he

he has seen the effects of both. Spudding nearly eradicates them, provided the thistles are cut under the surface of the ground. Mowing pleases the eye for a moment, but so far from destroying, seems only to increase them, and no doubt does, if they are suffered to ripen their seed before they are cut. I saw a very clear instance of the preference of spudding above mowing, in two pastures at Mr. Sheppard's, of Thornton. Mr. Sheppard spuds thistles, his neighbour mows them.

Mr. Westcar, of Kreslow, spuds thistles twice in a year, and his pastures are perfectly clear of them. Messrs. T. and J. Kitelee practise the same at Castlethorpe.

Mr. Smith, steward to Mr. Sheppard, thinks it absolutely necessary to manure all pastures which are mown: he grazes them also once in three years, and by that method destroys the weed called *yellow-rattle*, which otherwise would abound upon his dry pastures.

Mr. Dodd, of Cheynies, has lately improved some meadows near his mill, in an exemplary manner. Mr. Dodd took into his meadow a piece of land which was raised above the level of his meadow 18 inches, and which would have made a very unsightly appearance; and therefore, as the sward was good, and the subsoil bad, he breast-ploughed it, reserved the flag, and carried away the subsoil 18 in. deep, to fill up ditches and hollow places: he then laid down the flag again; the consequence is, that he has got immediately a fine herbage, free from weeds and barren spots. Salter's method of improving meadows, mentioned in this Chapter, and in Chap. VII. Sect. 10, would not have answered Mr. Dodd's purpose so well as that which he adopted, on account of the badness of the subsoil, which was chiefly gravel.

In

In order to destroy rushes after proper drainage by open and hollow drains, the most effectual method is to mow them in the spring. Dr. De Salis, of Wing, had a pasture allotted to him upon the enclosure there, which in its then state, was extremely boggy, and full of thistles and rushes, and not worth more than 5s. per acre. By under-draining, spudding thistles, and mowing rushes, he has made this meadow nearly as good as the best he occupies, and worth at least 35s. per acre. Upon this pasture, the Doctor's steward, who is a very intelligent servant, informed me that all neat stock used to be subject to make bloody water, and particularly such stock as had not been bred upon the land; but since it has been under-drained all stock thrives well. After under-draining, however, the Doctor's steward still thought no stock improved so well as that bred upon the land, and therefore he conceived the plan of overstocking the ground as much as possible. The Doctor allowed him to pursue the plan, and now every kind of stock put upon that pasture, prospers and improves as well as upon any of the best pastures in the country.

Size of Pastures.—This varies from 20 to 300 acres, but the most common size is from 50 to 100 acres. Surely farmers will allow, that the threefold evil arises from this circumstance: for upon pastures so large, and upon a soil so retentive of water, there is not a sufficient drainage; in the next place, the cattle are not well sheltered, when necessary, from the inclemency of the weather; and in the third place, as the farmer is not enabled to shift his stock at pleasure, by putting his best stock to the best food, and by supplying

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their

their place by *followers**, there must be a waste of food.

Some farmers in Bucks contend, that the first of these is no evil, because it carries with it an advantage, which draining by ditches round small enclosures would defeat, viz. moisture in certain parts of their pastures which lie upon a descent, from whence a herbage is produced, which in dry seasons form the only spots from whence they can find a resource of food. Those who argue thus, would do well to consider, whether such food is not scanty, bad, and purchased at a dear rate, and whether such a resource would be necessary in case the land were divided properly into pastures of different natures; and withal, whether, where water thus starts out from the side of a declivity forming such herbage, it might not be taken off into a reservoir, from whence it might be spread over the lower parts of the pasture in the form of catchwork upon a water meadow, and thus produce a much greater abundance of seed, and of better quality, than it is possible could be produced by the former neglected state.

The second evil will be allowed by those who know the value of warmth to a certain degree for a feeding beast or a milch cow, and indeed is provided against in some measure for the winter season, by placing the ricks of hay in spots the best sheltered, around which, at a proper distance, troughs are placed to feed cattle, otherwise the ricks are made near the milking house†.

The third evil is very discernible in the large patches of grass throughout pastures, left untouched by cattle.

* By followers are meant, hungry or store cattle.

† See Plate V.

It is vain to urge, that these patches are at last consumed, because the answer is ready, although perhaps not known to all, viz. that those patches do not return so much food by a great difference, as the parts which are constantly fed close. I must illustrate this assertion by relating a fact which occurred in Norfolk upon a field of cock's-foot, grass which is to be found every where in Bucks upon the pastures, and is generally fed close. Mr. Overman, late of Burnham in Norfolk (whose death all his acquaintance, and no one more than his landlord, Mr. Coke, of Holkham, deploras as a loss to agriculture), sowed cock's-foot grass without any mixture of other grasses, upon one side of a very large field, in order to try it against ray-grass, sown alone upon the other side of the field. They were both fed by sheep in the day time. In a morning, as soon as the sheep were turned into the field, they constantly run to the cock's-foot, and fed it bare before they cropped the ray-grass at all. Mr. Overman repeatedly measured the length of the growth of the cock's-foot between the times of feeding, and found it grew an inch in a night. Mr. Overman related this to Mr. Coke, Mr. Curwen, of Workington, in Cumberland, and to myself, when we were present in the very field upon the cock's-foot, and we had no reason but to give full credit to his account. Now may we not from hence infer, that upon those parts of pastures which are kept constantly fed close, a much greater quantity of food is produced than upon those patches which no animal crops, and which only can be estimated by the food they give after they are nearly withered upon the ground, or cut by the scythe for hay? If the pastures were small, cattle might be shifted, and much of this waste fed again and again.

Hay-making.—Great care is taken in the making of hay in all parts of Bucks. As soon as mown it is spread over the field: it is then raked into small rows, and put into small cocks: this is the process of one day. The next day these cocks are spread again about the pastures, and before night put into larger cocks than before. The next day, if the hay was not dry enough, it is thrown out again, and either put into still larger cocks than on the second day, or immediately carried to the rick. I saw a great deal of pasture and meadow hay, which was stacked within three days after it was mown, and some without being cocked at all. The general care is to make it as dry as possible, by keeping it constantly moving and turning over, and to retain its colour. The form of the stacks or ricks is given in *Plate V*. Very little thatch is put upon their tops.

The produce of hay is from one to two tons per acre: a few instances occurred where more was produced. At Thornborough, a piece of meadow of 25 acres produced last year two tons per acre of hay, at the first cutting, and one ton per acre at the second cutting.

Some meadows are mown twice. Upon this subject Mr. Dodd, of Cheynies (see the article *Banking*, in this Chapter), writes thus: "I am inclined to desist from the practice of mowing my dressed meadow twice in future, not that I perceived it injured from that circumstance (as I constantly manure it every year, one part with dung and with compost, and the other with wood-ashes, which I change alternately), but conceiving it will answer all the purpose of the second cutting (which is ever got in at a great expense, being in the harvest month), by pursuing the plan after cutting in June, to graze it about a month, and then shut it up till November, which

which I expect will be nearly as beneficial to the cattle during the winter, and probably much better for the meadow the next year. There is but one objection to this plan, which is, that it will prevent my setting on the manure so early, unless I put on a part of it (say the dung) immediately after the cutting in June."

Stock.—This consists either of bullocks and sheep or of cows and sheep. The farms upon which neat stock is grazed, are but few in comparison with those which consist of dairies, and none which carry on both grazing and dairying.

Of grazing stock no farmer would acknowledge he had pasture rich enough to fat a beast upon an acre. There are, however, a few spots which will do this, particularly at Quarrendon.

At Berryfield, Mr. Rose says it is hard stocking to put even one beast, an ewe and lamb, upon an acre and a half. By a beast is meant here, and throughout this Report, the Hereford and Devon.

At Tyringham, the pastures carry two bullocks to three acres.

At Filgrave, they allow a beast and two sheep to two acres.

At Olney, the average is one bullock and one sheep and a half to two acres.

At Cold Brayfield, a bullock to three acres, and not a sheep to an acre.

At Eythorpe, pastures carry a bullock upon one acre and a quarter, with a sheep upon an acre.

The average value then of the grazing pastures is very little more than a bullock of 125 stone, of 8 lb. to the stone, and two sheep to two acres.

What the quantity of land applied to grazing is,
n 3 may

may perhaps be conjectured, by considering that there are but few graziers except the following, Mr. Westcar, Mr. Chandler, Mr. Rose, Mr. Praed, Messrs. T. and J. Kitelee, Mr. Morgan, Mr. Pinfold, Mr. Harrison, Mr. Watts, Mr. Cox, Mr. Woodman, and a few more, whose names were either not mentioned to me, or who were said to have the same kind of beasts and the same kind of feeding (viz. summer feeding upon grass), as those already stated, and whose land was of the same quality. If then conjecture may be indulged, there will not be more than 6000 acres of pasture applied to grazing neat stock, and consequently the number of beasts grazed in the summer is 3000.

Of stock for the dairy, a minute examination of the account stated in Chap. IV. Sect. 1, under the article Size of Farms, will give as an average of cows 32 to 151 acres, for summer and winter food. For it is to be observed, that in Bucks no farmers give any other food to milch cows but hay, except in a very few instances.

But in this average of acres is included the feed of some sheep and a few horses, and therefore must be used only as the means of computing the number of cows kept upon the farms.

Total Number of Cows kept, with their Produce.

By the computation made in Chap. I. and Sect. 2, the number of acres in pasture in Bucks is 151,006. By the calculation now made, 6000 of these are grazed by neat beasts for market, to which must be added, according to my notes, 6000 mown upon such farms for hay. Hence, 12,000 acres must be deducted, as not being applied to cows. Another deduction must
be

be made for the commons belonging to the open-fields : these we have every where stated to be 30,000, for although cows are kept upon such commons, yet they are so few in comparison with the number kept upon the enclosures, that for the present they must be omitted. We shall have then 109,006 acres of pasture stocked with cows, 32 upon 151 acres. Whence the number of cows will be 23,100 ; to which add, for the commons belonging to the open-fields, one to eight acres, and the total number of cows will be 26,850, including heifers, for which, if we deduct one in five, the number of profitable cows will be 21,480 : thus,

The number of acres in pasture, is } by Chap. I. Sect. 2,	151,006
Deduct { for grazing,	12,000
{ commons of open-fields,	30,000
	<hr/> 42,000
Remain to be stocked with cows,	<hr/> 109,006 acres.
These will require, allowing 32 cows } to 151 acres,	23,100 cows.
Add for 30,000 acres of the open-fields,	3750
	<hr/> 26,850
Deduct one in five for heifers,	5370
And the number of profitable cows are,	<hr/> 21,480

From the most correct information upon the subject of the produce of butter, it appears, that for forty weeks in a year a cow can be stated to produce upon an average not more than 5 lb. per week : every cow therefore gives 200 lb. of butter annually. If therefore, the

total number of cows has been stated correctly, the quantity of butter must be 4,296,000 lbs., that is, about 1917 tons annually.

In the above estimate, mention has been made of sheep; but as no pastures upon the dairy farms or upon those of a mixed nature, are applied to sheep, it will be better to defer the estimate of their number and all observations upon them, to Chap. XIV.

SECT. IV.—LAYING LAND DOWN TO GRASS.

LORD CARRINGTON has taken great pains to produce a good sward in front of the Abbey at Wycombe. Mr. Heath, who had the principal management of it, informs me, that in attempting to lay down a part without a crop of corn, he failed, but upon a second trial with barley, the produce of corn was 8 qrs. per acre, and the seeds prospered. Rib-grass was sown with the Dutch clover and ray-grass. Sheep were folded upon the leys, and trod them well to destroy moss.

Mr. Chaplin, of Aylesbury, laid nine acres to grass for a continuance two years ago: of trefoil, 3 lb.; of Dutch clover, 10 lb.; of ray-grass, 1 bushel, per acre.

In such instances it surely would be advisable to add all such valuable grasses as are congenial with the soil, and such are to be found in all the rich pastures in Bucks: see what is said upon cock's-foot in the last Section of this Chapter, under the article *Size of Farms*, and also Salter's method of improving meadows, in the same Section, and in Chap. VII. Sect. 10. To these may be added the method of thickening grass lands, by suffering

suffering them to stand till the seeds are ripe before they are mown.

Breaking up Grass Land.—A few instances of breaking up rich pastures in this county, have turned out so much to the advantage of the occupiers, that it has been said with truth, I believe, that farmers have with such circumstances, united with the high price of corn a few years since, realized within a few years, large sums of money, from 18,000*l.* to 20,000*l.* To this circumstance add the great price which the growers of woad will give for sward, viz. from six to eight guineas per acre, and more, paying all town charges, and no wonder will be expressed that the occupiers of land should be extremely desirous to be enabled by their landlords to break up grass land. Whether an argument in favour of it may be deduced from general principles, on the score of the public, as well as of the individuals interested, is a question of importance. This is not the place to argue the question, but it is undoubtedly the duty of him who surveys the agriculture of any county, to remind that county, that a question of importance arises from the state of agriculture found there. The question is this, whether there are not many farms in Bucks, which would admit, with advantage to landlords as well as tenants, of many acres of pasture being converted to the plough; and notwithstanding of allowing and obliging tenants to carry the same quantity of butter, the same number of cows, and many more horses to market, and of saving more corn for the public than will be sufficient to pay the extraordinary expenses? This is a question too important for an individual to decide, and too extensive for a survey, that is, for a report of the agriculture pursued

pursued in a county, except in a cursory manner. The Board is already in possession of opinions, the best that can be given, but not of facts sufficiently numerous.

Mr. Coke, of Norfolk, whose liberality and indulgence to tenants is not exceeded by any landlord in Bucks, and whose only wish is to find tenants desirous of benefiting his estate by good management equally with himself, in rewarding such tenants, has, upon requests at different times, given his tenants leave to break up grass land, being himself a good practical farmer, and therefore not unacquainted with the questions stated above. From the accounts delivered, of the consequences of such requests being granted, a poor encouragement is held out to landlords to give into such measures, without leases for a sufficient time, enforcing proper covenants, and increasing the rents accordingly.

Mr. Lynes, of Hillesden, one of the tenants now alluded to, broke up some grass land. The first crop was by one ploughing, without any preparation; oats sown broad-cast, five bushels per acre, of which the produce was not two quarters per acre.

The next year Mr. Lynes ploughed once for beans; he drilled four bushels of seed per acre, in rows 14 or 15 inches apart, and was at the expense of hoeing them, 14s. per acre; the produce was not good.

In the third year the same land was manured with 14 loads of yard muck per acre, and had three ploughings, and was sown with wheat, two bushels and a half per acre, and the produce was *pretty good*.

Mr. Lynes broke up another piece of pasture, by paring and burning the flag, about Midsummer: he ploughed it four times, and sowed wheat broad-cast, two bushels and a half per acre; the produce was not more than two quarters per acre, and left fouler than that

that mentioned above, which was not pared and burnt. Mr. Lynes is now (1808) following this.

Mr. Graves, under the same landlord, broke up four years ago eight acres of sward. He pared and burnt it, and sowed oats: the produce was not more than 18 bushels per acre. The next year he sowed beans and pease: the crop yielded not 20 bushels per acre. The third year wheat was sown, and produced three quarters per acre; the fourth year vetches; and now (1808) he has sown wheat again, without any manure. Qu. the crop?

It is with extreme caution such indulgences as these should be granted to any tenants, and particularly to such as are ignorant of the management of arable land. If an estimate were made of the profit and loss attending the above circumstances, it would be found that the tenant has gained nothing; his expenses have exceeded the produce. But from the advantage of a little straw for winter to make manure, and a few oats and beans for his horses, he is encouraged to ask for permission to break up more sward; and thus he would go on so long as sward remained and his landlord were indulgent, until he would ruin himself, and put the land into such a state, that it could not be recovered before it had undergone an expensive course of three or four years.

After such instances, few farmers acquainted with business would be desirous, and still fewer landlords willing to give them the power, of breaking up pasture land; nor ought it to be done in any instance, without capital necessary to prepare such land, leases to ensure the fair return for such capital, and a knowledge of the management of land, to enable those who undertake it to do justice to themselves and their landlords.

CHAP. IX.

GARDENS AND ORCHARDS.

THERE are no gardens or orchards managed in such a manner as to require public notice. The orchards are entirely neglected. Many cherries are grown, and sent to Aylesbury and London market. It would puzzle a moralist to conjecture how a cherry ground should be made the cause of local pride; but so it is at Flackwell-heath. With shallow vain persons, let any thing be done, either by accidental or natural means, which produces effects of public notoriety, and even though they themselves have had no concern in producing them, but merely live in the neighbourhood, yet they are so infatuated as to feel an unaccountable pride in any advantage attending it, and depression of spirits at its disadvantages. Flackwell-heath abounds with cherries. Should the season be propitious to the growth of this fruit, the whole neighbourhood vaunts itself, and is as much puffed up, as if they were the cause of the abundance; so that if upon the road you meet at the cherry season a person belonging to the place (I do not say of the *first* class of people), and necessity obliges, or curiosity induces you to ask him from whence he comes, he replies immediately, "*From Flackwell-heath. Where do you think?*" On the contrary, should some perverse cause have prevented the growth of cherries, or adverse winds and frosts have cut them off, and you should have occasion to put the same

same question, he replies (but mark his depression),
“*From Flackwell-heath—God help us!*”

The above is a well known story.

At Thornton, Mr. Sheppard's bailiff shewed this year the effects of cutting out a ring of the bark of a pear tree. The tree was very old, and never had borne pears. In May (1808) Mr. Smith cut out a ring of bark between two and three inches broad, and the full depth of the bark : the consequence has been, that the tree has been full of fruit.

CHAP. X.

WOODS AND PLANTATIONS.

COPSE WOOD.—See Chap. II. Sect. 2, where an account is given of the nature of the copses in Whaddon Chase. These are sold as fire-wood and for fences. The faggot wood at 24*s.* per hundred, viz. 120 faggots. The thorns are sold not only for fences, but also to fill up under-drains, and for this purpose are carried many miles.

At Hillesden-wood seven or eight acres are felled once in twelve years. The whole felled is divided into portions called *cuts* (five poles long and four broad), and sold from 5*s.* to 45*s.* each cut, according to the produce.

At Emberton there are about 80 acres of wood, of which six are felled every year.

At Stoke-Goldington there are 140 acres of copse wood, which is sold by the score poles, from 8*d.* to 12*d.* per pole.

It is a practice upon some farms highly to be commended, to set apart one side of a field upon the skirt of a farm, or elsewhere if convenient, ten, fifteen, or more yards in breadth, for the purpose of growing fallows, ashes, elms, &c. to make hurdles (See p. 117). Such copses, well managed and properly situated, serve another purpose of no small importance, which is, as a shelter for cattle in extreme heat and extreme cold. Mr. J. Kitelee, at Castlethorpe, has such a copse. The Rev. Dr. de Salis, at Wing, another.

Mr.

Mr. Rose, at Upper Winchendon, plants willows in the bottoms of his pastures and by the side of roads and brooks, to serve as stuff for hurdles, of which he makes 20 dozen annually.

At Wendover, willows are grown upon some fences for the same purpose, and cut once in four years; but such fences should be protected against sheep by ditches and furze.

The woods in many parts of the Chiltern Hills, particularly at West Wycombe, abound with juniper: it does not rise to a great height. Some gentlemen are of opinion, that the growth of the juniper should be encouraged upon the borders of fields, as shelter for sheep in summer, which otherwise herd together in hot weather, and by running their noses under each other, receive the egg of the fly, which is found in the form of a maggot secreted in water in their head.

Beech and other Wood.—Beech is by far the most abundant wood in Bucks. The woods of beech are so numerous as to give the country a very rich appearance. The general use to which they are applied is in the manufacture of chairs in Bucks and in London: they serve also as fuel, and in some cases are used for repairs and for barn floors; in which instance the joists are of oak.

Lord George Cavendish regularly *draws*, that is, thins his woods at Latimers, by certain portions every year, cutting out the large timber, and leaving the young trees to grow up in their stead: this is a practice too much neglected in the woods of Bucks. Beech wood, if it contains a load, sells here from 15*d.* to 17*d.* per foot. At Cheynics, 1*s.* 6*d.*; but the inferior sort at 1*s.* per foot.

At

At Shardeloes, the seat of T. D. T. Drake, Esq. the beech wood is beautiful. Mr. Drake has one beech, which is perfectly straight, and 75 feet in height from the ground to the first bough. It has then a top, which (from conjecture, I believe) rises seven or eight feet, and spreads a circle about eight or nine yards in diameter. This tree measures seven feet eight inches at two feet from the ground, and six feet ten inches at five feet: if then we take its quarter girth, 21 inches, this beech contains 229 feet of timber, that is, somewhat more than 5½ loads.

The timber in Ashridge-park, belonging to the Earl of Bridgewater, is not less worthy of note. His Lordship very kindly ordered two oaks and two beech to be measured for me.

The first oak measured 11 ft., with a quarter girth 53 in. which gives somewhat more than 214½ ft. or five loads 4 ft. of timber. The second 20 ft. with a quarter girth 42 in., which gives 245 feet, or 6 loads 5 ft. of timber.

The first beech measured 75 ft. with a quarter girth 17 in., which gives nearly 150½ ft. or 3½ loads.

The second beech measured 70 ft. with a quarter girth 20 in., which gives somewhat more than 194 ft. or 4½ loads of timber. Beech is worth here from 1s. 6d. to 2s. per foot.

Mr. Ayton, at Missenden, prunes the trees in his woods. He has very fine beech trees*.

Mr.

* I no where heard that any experiment has been made in this county upon the use of the beech mast, notwithstanding the great number of beech trees, except as food for pigs. When roasted they have answered the purpose of coffee, and in France it is said, the oil expressed from them

Mr. Hanmer, of Stock Grove, has taken great pains to produce plantations, and those which were formed eight years ago are now in a very flourishing state: the oaks and other trees are at least 18 ft. high. Mr. Hanmer prunes and thins them annually.

The practice of lopping and *shrouding* trees, abounds so much in some parts of this county, as to give a very unsightly appearance to the country, and is undoubtedly very injurious to the trees: this arises sometimes by agreement between landlord and tenant, and sometimes by connivance.

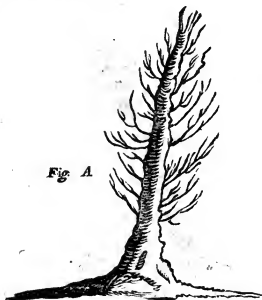


Fig. A, is meant to represent an ash 30 ft. high, with

them has been used as a substitute for that of olives. And Dr. Anderson says, that a full grown beech will afford eight bushels of mast in ordinary years. A few such trees might pay well for experiment.

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a girth

a girth of 6 ft. 8 in., about 5 ft. from the ground, lopped in the manner mentioned above. Such instances are very common in many parts of the county.



Fig. E

Fig. E, is meant to represent an elm 70 ft. high, with a girth larger than the ash *Fig. A*, *shrouded*, as it is termed.

Such lopping and mangling of trees renders them unfit for any thing but the fire.

Upon Lord Chesterfield's estates the practice of lopping

ping has been prohibited by Mr. Kent, in his late regulations for the management of that estate.

Bark is sold in some places in Bucks by the yard, measured as it stands after it is peeled, when ranged in rows by the bark peelers: the price last spring was 5s. per yard, *i. e.* for 1 yard and 1 inch*.

The difference of soil above and below the Ikenild-way has been mentioned before; this difference is in nothing more apparent than in the growth of trees. Sir John Dashwood King, of Halton, who is extremely accurate in his observations, says, that below the Ikenild-way, beech, ash, larch, and fir, do not flourish, whilst all other trees, oaks, elms, horse-chestnuts, whitethorn, &c. are very promising. I measured the girth of an oak at Halton, 20 years old, growing in the hedge, without having had any care taken of it, about 12 ft. high from the ground to the boughs, and its quarter girth was 9 in. In this oak were $6\frac{1}{4}$ ft. of timber. I must not omit to state here, that for two

* The only fair way of buying bark is by weight. The method of buying by the *load* of timber is not equable, *cæteris paribus*, and ought to be disused.

For example: Leave out all consideration of the value of bark commensurate with the spreading of the top of a tree, and let us consider merely its measurement, and suppose a timber to be in girth 48 in., its quarter girth is then 12 in. Suppose it also 40 ft. in length; here then we find a load of timber, and 1920 superficial feet of bark.

Now let us suppose another tree of the same length, but to have 72 in. girth, that is, a quarter girth of 18 in. In this tree there is $2\frac{1}{4}$ loads of timber, and only 2880 superficial feet of bark.

Now the second tree ought to have 4320 feet of bark, to be commensurate with the quantity of timber. Hence, the bark of a small timber is more advantageous to the buyer than that of a large one, *cæteris paribus*. In general, the quantity of timber is found by *solid* or *cubic* measure, and that of bark by *superficial* or *square* measure, and therefore cannot be in proportion to each other.

years I have measured some oaks in a parish in Norfolk, which are about 40 years old, the height of which are about 12 ft., their quarter girth was 12 in. in 1807, and 13 in. in 1808. In 1807, therefore, these oaks contained 12 ft. of timber.

There is a very remarkable old oak at Thornton, belonging to J. Sheppard, Esq. It is quite hollow, and has contained seventeen persons within it. It is fifteen yards round it at the roots. An ash tree near it was cut down last year (1807), and the oak seems to be dying in consequence.

Observation.

The care and protection of timber and of wood, in general, is a matter of the utmost concern to the individual owner of such wood, and to the public at large, particularly when the great advance in price upon it is taken into consideration, and its great importance in this empire. This is not the place for disquisition, but this is the place to state such facts as naturally arise from observations made upon the Survey now under consideration. Every one undoubtedly knows, that trees of all kinds advance in size annually, but I have not yet discovered any practice of the owners of such trees in Bucks, to acquaint themselves with the annual and regular progress in growth made by them: from such neglect losses must arise, losses which admit of calculation, but which shall now be stated only in general terms. Suppose a tree to increase in girth an inch in a year for a certain number of years, and then to begin to decrease in its annual growth, no doubt can exist, but that at the precise time when it began to decrease, it ought to have been cut down, if the advantage of the proprietor of such tree, and of the public, is to be consulted:

sulted : for by thus managing timber, such a regular succession might be kept up, as to produce the most timber possible upon a given quantity of land, and economy in the management of every thing, in which the public is interested, will not be looked upon as a point of no moment in the present times. Plantations of oaks, which had nothing else to recommend them but age, would be full as despicable a sight as farms filled with a rotation of crops consisting of the tulip, the hyacinth, and the ranunculus. What then should be the practice with those who have large or valuable woods and plantations ? I answer, to have them examined at stated periods : to note what are increasing in value, and what decreasing ; to select such young trees as are necessary to keep up a regular succession, and to cut down those which obstruct the growth of the rising plants ; and in every instance where timber is to be cut down, to compare accurately the value of money with the value of timber.

CHAP. XI.

WASTES:

THERE is but little to be said upon this Chapter. Exclusive of that waste apparent in unenclosed fields, subject to the open-field culture, the wastes which require particular notice, are those enumerated in the Appendix, No. XII. Between Wavendon and Brickhill, a very poor soil has, within a few years, been planted with firs, which will soon repay the expense of cultivating them, and make a sufficient return to the proprietor, His Grace the Duke of Bedford, to encourage those to whom it belongs, to treat the waste land between Brickhill, Leighton, and Soulbury, in the same manner. The cultivation of all wastes must sooner or later take place; the necessity and advantage of which have been so accurately and so frequently pointed out, that it is matter of surprise it takes place so slow. In the Appendix, the number of acres of wastes in Bucks, is said to be 6382; but in that account there may be some conjecture, and some omissions. I have taken the number to be 8000, which probably will be found rather less than the truth. Now, upon supposition that these are enclosed, and that one-third shall continue sward, there will be 5334 acres to be cultivated, which, under a five years' course, will probably produce more than 5000 quarters of wheat and 4800 quarters of barley, in addition to the present produce of the country; a circumstance of great importance in the

the relative extent of the county, compared with the country at large, and particularly when the deficiency of the produce of corn in the country is so much as 2,000,000 below the consumption.

CHAP. XII.

IMPROVEMENTS.

SECT. I.—DRAINING.

IT is impossible to ride through this county, and not observe places innumerable, where land is poisoned for want of drainage, not only upon the sides of hills, where a breadth of rushes growing about one-third from the top of them, from one side of a field to the other, evidently points out where the springs, bursting out, require to be cut through, but in almost every fence which divides one field from another. These places are so numerous, that it would be extremely invidious to point out particular cases. If you enquire the reason, one will tell you, that he would not have the water taken off by drainage on any account; for if it were, the water upon the top of the hill from whence that upon the sides issue, would by such drainage be taken away, and the cattle be deprived of water where they want it most. Another tells you he has no lease, and he cannot afford the expense; and a third can give no other reason, but that so it has been for time immemorial.

A few gentlemen are introducing under-draining.

Mr. Praed, at Tyringham, has under-drained 16 acres of land, by drains three feet and a half and four feet deep, at the expense of 100*l.* upon the 16 acres, and has been under the necessity of taking some land into

into his own occupation, because he could not persuade his tenant to drain it properly.

Mr. Swannell, of Filgrave, has done some under-draining. He has expended 20*l.* this year; the same last year; and in some years 50*l.* upon husbandry of this kind. The depth of his drains is three feet, and in some cases seven and eight feet. The price of drains three feet deep, is 8*d.* or 9*d.* per pole of 5½ yards, for opening and filling them.

Mr. Turney, of Brickhill, has under-drained between two and three thousand rods of 5½ yards, from two to four feet deep, and filled up the drains with elm, blackthorn, and sallow. He prefers wood to stone upon his sandy soil.

Mr. Graves, of Westbury, has under-drained many acres at 1½*d.* per yard.

Mr. Woodman, at Stone, under-drains at 8*d.* per rod of 5½ yards; but the Rev. Mr. Rush thinks it ought to be done at 7*d.* Mr. Rush is well acquainted with the Norfolk husbandry. Mr. Woodman under-drained last year 200 rods in 16 acres. The farmer finds the tools.

W. Lowndes, Esq. at Whaddon, under-drains by the day. His drains are from two to six feet deep, and are filled up with blackthorn, willow, and green elm.

J. Sheppard, Esq. at Thornton, has improved some pastures by under-draining. The drains were cut a pole apart from each other, and 18 inches deep; but being filled only with thorns, and being too shallow, moles burrowed into them, and they were rendered useless. Since that circumstance he has made drains four feet deep, and filled them with stones, and now the work is complete. The drains stand well, and render
the

the lands above them perfectly dry and good, which used to be extremely swampy.

Dr. De Salis has practised under-draining upon a pasture, part of his allotment at the time of the enclosure there, with much success. The under-drains are deep, and cut in such directions as to catch the springs, viz. obliquely upon the descent, and are filled with blackthorn fetched from Whaddon Chase. A cow pasture opposite to his garden, was thus reclaimed from a boggy rushy state, and not worth more than 5*s.* per acre, to be now a most excellent pasture for any kind of stock, worth at least 35*s.* per acre. See page 241.

H. H. Hoare, Esq. at Wavendon, has improved pasture land near his house, by under-draining and sheep. Mr. Hoare fills his under-drains with blackthorn, covered with furze. Mr. Hoare has also used the mole-plough upon pastures and some arable parts of his farm, by first drawing a furrow with a double-breasted plough in the furrows of the ridges, and then following with the mole-plough. But Mr. Hoare seemed to agree with me, that it would have been better to have drawn the furrows across the ridges in an oblique direction to the fall of the land, on account of the treading of horses at plough.

At Horton, near the Thames, much has been done by Owen Williams, Esq. by draining. Many acres there used to be inundated, and many crops of wheat destroyed by the same means, until Mr. Williams cut a drain 15 miles in length, 12 feet wide at the top, six feet at the bottom, and four feet deep. It is highly gratifying to see such spirited means of improvement carried into effect; and the only astonishment they excite is, that they have been so long neglected.

At

At Halton, Sir John Dashwood King has reclaimed some pastures from bogs, merely by a small cross drain at the head of the pastures, and by drawing from it several small drains, from six to nine inches, upon the top, and about a foot deep, running parallel to each other, to take off the surface-water, or a redundancy after rains. Sir John has also put down a pump at a corner where three pastures meet, to supply the cattle in each pasture with water in troughs.

Mr. Foulser, of Amersham, has under-drained pastures. He has also a good ditch, which he calls a Norfolk ditch: it was formed by a man sent by Mr. Coke from Norfolk, to cut a Norfolk ditch and make a Norfolk fence at Hillesden. This ditch at Amersham is four feet wide upon the top, three feet in its perpendicular depth, and two feet wide at the bottom. Such a ditch as this is very rarely to be seen in Bucks; but until such a ditch becomes frequent, much land must be poisoned with water, and the crops be much injured. Indeed ditches five feet wide at the top, 18 inches at the bottom, and four feet deep, will be scarce large enough to drain many of the heavy lands, and must be formed, before those lands can be brought to such a state as shall return the greatest produce possible.

SECT. II.—PARING AND BURNING.

THIS practice is gaining ground every where, and is allowed to be the best way of bringing sward land to tillage.

At Stoke-Goldington it is done at 45s. per acre. The
paring

paring is begun in March, and the burning takes place when the weather permits. Sometimes a spring crop follows it, and sometimes wheat.

Sir John Dashwood King has had *paring* and *burning* done for 1*l.* 4*s.* per acre.

Mr. Graves, of Westbury, pares and burns at two guineas per acre, not only old pastures, but old grass leys and old sainfoin leys.

SECT. III.—MANURING,

IN some way or other, is practised for every crop. The different sorts used are, marl, chalk, lime, gypsum, ashes, soot, malt-dust, yard-dung, rabbits'-dung, pigeons'-dung, woollen rags, composts, and sheep's-dung.

Marl—Is found at Brickhill: it is used there 80 loads per acre; but Mr. Turney thinks 60 loads per per acre, repeated every seven years, the best way of using it.

Chalk.—The method of laying this manure upon land, has been described by Mr. Young in his Farmer's Calendar, and others, repeatedly, viz. by sinking pits, drawing up the chalk by baskets, and carrying it out in barrows. The same method is pursued in Bucks. Chalking is done once in about 21 years, and costs at Wycombe 2*l.*, and two guineas, per acre, for 60 or 70 loads per acre.

Mr. Ayton, of Missenden, chawks the clover-leys, and lets it lie during the winter. He mows the clover, and then breaks it up for wheat.

Mr.

Mr. Fowler, of Amersham, does the same, and also upon old sward; after spreading the chalk, he lets it lie till there comes rain, and then he harrows it well.

Some farmers chalk for turnips; but in such cases the chalk is not so well pulverized, nor so soon incorporated with the soil.

Mr. Pope, of Chesham, chawks 10 or 12 acres every year, and repeats it in 20 years. He lays on between 45 and 50 loads per acre, at 2*l*. By a load of chalk is meant 16 buckets, which hold each 1½ bushel.

Mr. Allen, of Checquers, lays on 16 loads of chalk per acre once in seven years, at 1*l*. 16*s*. per acre.

Lime—Has been used with much success in some instances in Bucks. The observation of the best farmers upon it is, that the second time of lining a piece of land never answers so well as the first.

No one has found more advantage from the use of lime than Ed. Hanmer, Esq. of Stock Grove. He uses 100 bushels per acre for his turnip crop, with farm-yard manure, and sometimes lime alone, which he buys at 3*s*. 4*d*. per quarter of eight bushels.

Mr. Hanmer has, by this judicious management, made land, which but a few years ago was not worth more than 2*s*. 6*d*. per acre, now worth at least 25*s*. tithe free.

The Rev. Mr. Cautley, of Moulsoe, has used lime, and laid on 160 bushels per acre. He has found no effect upon his crops except the turnips; but he finds great effect upon the soil, viz that it is rendered less cohesive, or (in other words) more friable, and consequently that the tillage is by no means so difficult to the horses as it was before.—See page 108, in the Chapter of Implements.

Mr

Mr. Allen, of Checquers, has used lime, but it does not answer.

H. H. Hoare, Esq. at Wavendon, who has undertaken the arduous, but very praiseworthy task of reducing the high ridges of his farm to a level, has used lime with great success. He lays on 80 bushels per acre, which he buys at 3s. 6d. per quarter; sets it upon the land in small heaps, and covers it with mould; when the lime is slaked, he spreads it about the land. No other manure can render friable such a cohesive soil.

Mr. Hoare has mixed lime with mud taken out of a pond, and set it about his pastures; but the effect of the mud without lime, was nearly as good as that with it.

Mr. Praed, of Tyringham, this year (1808) had a trial of lime, against folding and farm-yard manure. It was upon a field of 17 acres of wheat, of which he manured five or six acres with lime only, laying on 120 bushels per acre. Upon the other part of the field sheep were folded, and 12 cart-loads of dung were carried from the farm-yard. At the latter end of June, the crop upon the part which was limed, did not appear so good as upon the other parts; but the land was by far the cleanest.

Mr. Leeds, bailiff to Mr. Praed, has informed me, that when reaped, there was no difference in the crop, which was 50 bushels per acre. He observed however at the same time, that the part limed had been run out by cropping. Mr. Praed burns his own lime at less than 2s. 6d. per quarter.

Lime has been used at Hillesden with success. Mr. Morris has at different times had permission from his landlord to break up old pasture land, but never reaped

reaped good crops until he laid on 20 quarters of lime per acre. Lime is purchased there at 2s. 9d. per quarter.

The Rev. Dr. Lord, of Drayton Parslow, limed one-third of seven acres in 1799, with 100 bushels per acre upon a stiff clay, when he was fallowing for wheat. In the wheat crop no effect was seen. The year following he sowed wheat again, and upon the part where the lime was laid, the straw was considerably higher and stronger, and the ears of wheat two inches longer, than that in the other part of the field, and the effect is still (1808) visible.

Gypsum—Is a manure about which every one is enquiring, many making experiments, and no one able to give much account.

Mr. Woodman, of Stone, upon a clover ley, spread upon one part six bushels of gypsum per acre, at 6s. per bushel; upon another part 40 bushels of ashes per acre, at 7d. per bushel; and upon a third part nothing. There was to appearance no difference between the parts which had gypsum and ashes, but they were both far superior in colour and quantity to the clover growing where no manure was used. To make such experiments complete, equal portions of the clover should be weighed at the same time of the day against each other.

Mr. Dodd, of Cheynies, had seen the same experiment made upon a clover crop near him, and resolved to try it upon the meadow opposite to his house. Upon part of the meadow he spread six bushels of gypsum per acre, and upon another part from ten to twelve sacks of ashes: the effect of the ashes was good, but that of the gypsum better.

I desire

I desire to state the only experiment I have been able to make upon gypsum. Having the honour of being Secretary to the Agricultural Society in Norfolk, I received two bushels of gypsum as a present from a person in Norwich, in order to use it as I pleased, and report its effect. I marked out a quarter of an acre in a field of about twelve acres, and upon half of this quarter sowed a bushel of gypsum with turnips, and harrowed them in. Upon the other half of the quarter of an acre I did not sow the remaining bushel until the turnips appeared, thinking it might be the means of destroying the fly, as well as manuring the land. Upon the rest of the field I had set ten loads per acre of farm-yard manure. The whole crop of turnips was taken off by the fly, and the land was ploughed and sown afresh. I could perceive no difference in the turnip crop, between that part where the gypsum was sown and that where farm-yard manure was used; nor in the succeeding barley crop, nor in the present clover crop, which consists of purple clover, white clover, and ray-grass, and is to be mown in the summer of 1809. I have been told I should have applied the gypsum to the clover crop solely, but I considered that the turnip crop is the first care of the Norfolk farmer, and that to secure it is his first concern.

Ashes—Are universally used upon the clover leys, from twenty to fifty bushels per acre. They are brought from London by the Grand Junction Canal, or otherwise, and cost at the wharfs about 6*d.* per bushel.

Mr. Forster, of Wendover, purchases yearly as much ashes as cost him 100*l.*

Soot—Is much valued by some farmers as manure for

for wheat. At Buckland it is sown upon wheat, forty bushels per acre. Mr. Lovell, of Lee, sometimes uses soot upon wheat: he sows in the spring thirty bushels per acre: hitherto he has bought it at Brentford at 9d. and 10d. per bushel.

Malt-Dust—Is by no means a common manure.

Mr. Davis, at Cheynies, uses it as manure for wheat, and esteems it highly. Few persons can procure this manure, otherwise it would be more in use.

Yard-Dung.—Opinions and practices vary as to the method of using farm-yard manure. Some farmers carry it out from the yard and lay it upon a heap, in order that it may rot previous to its being spread upon the land, for if it is laid on before that time, the consequence is, that it encourages the growth of twitch-grass, and the seeds of weeds in it not being rotten with the manure, the land is rendered foul by it.

Others, on the contrary, argue in favour of long manure from practice, asserting that it has almost double the effect. Of this class are most of the best farmers in Bucks.

I met with no experiments to ascertain the fact. It was strongly recommended at Holkham Meeting this year by Professor Davy; and Mr. Coke seconds the recommendation, by being enabled to state in consequence of it, that he has this year used long manure for his turnip crop, and found it completely answer Mr. Davy's statement.

It is true, that it is a prevailing practice in Bucks, to carry yard-dung in its long and hot state upon land, but it is also a common practice to spread it in that state, and thus to suffer it to lie as well upon a tilth as
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upon an olland, in some instances six weeks, before it is ploughed in, in others less; but in no instance did I see the practice pursued in Norfolk, viz. for the manure to be spread just before the plough, so that little or no evaporation may take place before it is covered with a slight coat of mould, or as it is there termed, before it is *scaled* in.

What the evaporation or loss of fluid may be, which arises from exposing long dung upon the ground in the manner now mentioned, no one I believe is able to state accurately: but the following fact I can state as perfectly correct, because it took place in the presence of J. C. Curwen, Esq. of Workington, in Cumberland, his son, and myself. It was in the month of October, 1807, in the middle of the day, and there was much moisture in the ground. Some land was stirred on purpose for the experiment, i. e. to discover how much fluid was then evaporating from that spot of ground. We took a large glass, the circumference of which was $18\frac{1}{8}$ inches, and having with a sponge perfectly cleaned the inside of the glass, and cleared it of all moisture, we turned its mouth downward, and set it upon the land which had been stirred: at the end of a quarter of an hour we took it up, and with the same sponge with which we first cleaned the inside, and which we had after that weighed accurately, we wiped the inside of the glass, now full of vapour which had risen from the spot of ground under it, and weighed the sponge again, when we found it had contracted in moisture four grains in weight. What then would be the weight of moisture issuing from an acre of land under the same circumstances in the same time? I answer, nearly $1\frac{1}{4}$ cwt., for it is about 1 cwt. 5 lb. 5 oz. 12 dwts.; and if we may suppose, that in the next quarter

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for of an hour only half the quantity is evaporated, we shall find that within half an hour, upon an acre of ground immediately after ploughing, under the circumstances stated above, more than 2 cwt. of fluid would be lost. Apply this to the evaporation which takes place from long dung, brought in a warm state fresh from the yard, to be spread immediately, or very soon, upon the land in the hot months of the year, and there to remain several days, or (as I had an opportunity of observing in some instances) weeks, and the effect to be suspected, should induce those who are interested, to make accurate experiments upon this point in husbandry, and at least to assure themselves that the present practice is right.

Mr. Parrot, steward to the Marquis of Buckingham, at Stowe, has an excellent method of making yard manure, which is by laying straw into a reservoir for the drain of the farm-yard, which reservoir is conveniently situated below the yard.

Mr. Dover, of Thornton, brings the ant-hills from his pastures into such a reservoir.

Mr. A. Lynes, of Hillesden, has a hoghole adjoining to his pig-sty, into which the drain of the farm-yard flows: the hole is six yards long, four yards wide, and one yard deep. This drainage he carries out upon his pastures in a large tub holding two hogsheds, which is fixed upon an axle with wheels, from which tub the liquor runs into a trough with holes at the bottom. This is placed behind the tub, is $4\frac{1}{2}$ ft. long, $1\frac{1}{2}$ ft. broad, and half a foot deep. With this Mr. Lynes manures ten acres of pasture every year: his observation is, "that this manure does most service in wet weather: in dry weather it requires water to be mixed with it, being too strong for the pastures."

Mr. Smith, of Thornton, informs me, that Mr. Biggs, of Cublington, uses the drain of his farm-yard in the same manner as Mr. A. Lynes, and that he has a pump in the reservoir for the purpose of filling the water carriage. Mr. Biggs sometimes top-dresses corn by this carriage, and has got large crops by that means, particularly a crop of oats lately.

Rabbits' Dung—Is used in the neighbourhoods of Aylesbury and Wycombe, where rabbits are kept in houses by private persons. It is laid upon wheat, barley, and grass, forty bushels per acre, but is said to have the best effect upon barley: the price is 6d. per bushel. Mr. Chaplin's bailiff, in the estimate of manures, says folding of sheep is the best, farm-yard dung next, then ashes, and last of all rabbits'-dung.

Pigeons' Dung—Is sown at Shardeloes, near Amersham, broad-cast, in April, upon barley and wheat, where they appear of a yellow colour, and the effect is very soon perceived in the change of the colour of the crops.

Woollen Rags—Are used upon the Chiltern Hills by most farmers, in the same manner as oil-cake* in Norfolk,

* This is an inferior kind of cake, generally made of rape, which having first been broken into small pieces, is sown broad-cast upon the land, and harrowed or ploughed in with the wheat: it is bought now at 9s. 10s. per ton. Some farmers sow a ton upon two acres, others a ton upon three; Mr. Coke drills oil-cake with turnips, one ton to six acres, by a machine made for the purpose. This quantity of oil-cake is used upon the best turnip land, but upon land of an inferior quality, Mr. Coke uses only a ton upon three acres: he first uses long yard-manure as far as it will go, and then oil-cake. It was the practice of Mr. Over-

man,

folk, as manure for the wheat crop. About Benconsfield the general quantity is a ton to three acres, purchased at 8*l.* per ton.

Mr. Forster, of Wendover, observes, that woollen rags are not now so good as they used to be, and that they are most serviceable upon light soils.

Mr. Heath, of Wycombe, uses them: he observes, that they are a good manure upon gravel and sand, but not upon chalk, for there the wheat blights and dies away.

Peat—Is used at Cippenham Court by Mr. Langton, without success. My advice to him was, to try it once more without burning, having seen instances of its success upon gravelly soils, when laid on for turnips in the same state in which it comes from the moor.

Composts—Are formed by most farmers. Many form them of farm-yard dung, mould, and lime. Mr. Foulcr, of Amersham, is extremely anxious in this husbandry. He rakes and scrapes together all the manure he can find upon the roads, and employs women and children to gather all the dung possible, for which he pays 2*d.* per bushel. Mr. Foulcr lays long yard-dung upon his meadows, and composts upon his uplands.

R. Ward, Esq. of Hyde Lodge, near Chesham, employs women and children in the same manner, and

man, late of Burnham, to apply both farm-yard manure and oil-cake, of the former only eight or ten loads, and of the latter one quarter of a ton per acre.

gives the same price : he buys also bark from the tanners, and thus forms composts.

At Shardeloes, the seat of T. D. T. Drake, Esq. the yard-dung was turned up, and the leaves of the trees which had been gathered in the park were mixed with the dung.

Mr. Forster, of Wendover, forms composts of turf and yard-dung, which he turns over once after a month, and uses for turnips : but he prefers long yard-dung to be *scaled in*, when the land is clean, and so to lie until the turnips are to be sown.

Sheep's-Dung.—By folding, is the most universal manure in Bucks, insomuch that sheep are hired for this purpose. The practice, however, of hiring sheep, exists only upon farms in the south of Bucks, where there are common-fields, and beyond the Chiltern Hills north, upon lands under the open-field culture, and has distinct usages.

The practice in the neighbourhood of Salt Hill, Slough, &c. is to hire them from Bagshot-heath, with or without a shepherd ; if with a shepherd, some allowance is made for him, but if without a shepherd, the sheep are turned upon the common-fields to feed when they go from fold, and no other allowance is made for them. On the other hand, should they go from the fold to good enclosed pasture, which is very rare, those who lett the sheep, pay in some cases 2s. 6d. and 3s. per score. Such sheep are procured as soon as the corn is harrowed, and remain there till the latter end of November or beginning of December. It is probable, that last November, within two miles of Crippenham Court, there were not fewer than 3000 sheep hired upon different

rent farms, in the manner and for the purpose now stated.

Farmers who adopt this practice save at least 15l. per cent. in capital on the score of sheep, keep all their land under the plough, crop* it according to convenience, not system, and have no care about the injury which sheep may sustain from folding: whether these are advantages equivalent to the loss of the profit to be derived from a systematical management of sheep and stock, is surely very doubtful, and to be estimated only by local circumstances, and principally by the vicinity to London, and the great road to Bath and Oxford, which gives the farmer an opportunity of selling hay and straw, and taking no care about winter food for cattle. It is not practised by Mr. Langton, an excellent farmer at Cippenham Court.

The second usage of sheep's-dung is, that upon heavy lands unenclosed under the open-field culture. These lands generally are in such a state as to discourage, and in fact prevent farmers from keeping sheep of their own. But poor men with a capital just sufficient to buy a sheep, either having a right upon the commons of the unenclosed lands, or gaining a right from those who have, go from one open-field to another with their little flocks of four score sheep each, to fold upon the fallows for the occupiers of such fallows, for which they receive usually 1s. per score per week, if they have the means of feeding their sheep by their own right; but if not, they fold for the right of keeping their sheep upon the commons. In a few instances 1s. 6d. per score per week was paid, but this depends upon the state of the sheep and their size, together with the

* See Chap. VII. Sect. 3, page 152.

state of the food upon the commons. No one would be surprized that farmers have recourse to hired sheep in such cases, who could see the state of the lands upon which the sheep are folded, or the food to which such sheep go from fold. Mr. Hardy, of Newport Pagnel, whose judgment upon subjects of this kind is highly valuable, writes thus: "Many of the farmers keep* no sheep, but hire flocks to fold their lands from April to October, for which they pay to foreign shepherd† 1s. 6d. per week a score. For this practice there are perhaps several reasons: dread of rot, insufficient winter keep, and want of capital." The only matter of surprize in this account is, how such practice can pay the shepherd: I no where got an estimate of such shepherd's profits, and therefore I can state them only from conjecture, observation, and such accounts as I could obtain.

Let us then suppose that a shepherd could get together a flock of four score sheep for 80*l*. we may collect his profit thus:

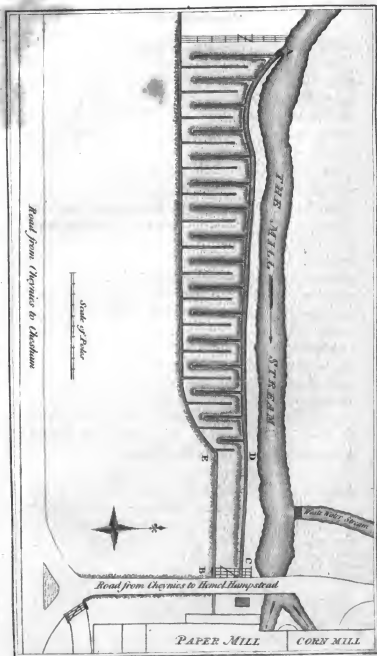
The Shepherd's outgoing Expenses:

Interest of capital,	£.4	0	0		
Labour, 10s. 6d. per week, omitting the harvest,	} 25	4	0		
Sheep annually bought, to supply those which die and are sold,					
	} 30 0 0				
	<hr/> £.59 4 0 <hr/>				

* Mr. Hardy is speaking of "open-field."

† By foreign shepherd is meant, a poor man who drives his sheep from one parish to another for hire.





The Shepherd's Income.

By wool, 3s. each,	£. 12	0	0
Folding, 1s. per score per week, six months, 24	0	0	0
Sale of 20 sheep annually, at 30s. each,	30	0	0
	<hr/>		
	£. 66	0	0
	<hr/>		

Allowing then the shepherd only 10s. 6d. per week for labour, here is a profit of only 6l. 16s.; and yet it sometimes happens, that such small profits as these, are the means of preventing many acres of open-fields from being enclosed.

SECT. IV.—IRRIGATION.

THERE is but one instance of irrigation worthy of record in the county of Bucks, and that is at Cheynics, upon a meadow containing only $1\frac{1}{2}$ acre and 8 perch, the property of His Grace the Duke of Bedford, formed by Mr. Dodd, in whose occupation it is. *Plate XIII.* is a delineation of it, which scarce requires any explanation. The beds with the floaters upon their crowns, and the drains between them, are 40 feet wide from drain to drain, and the fall, from the floaters to the drains, 20 inches; that is, an inch to a foot. The water enters from the stream at A, and by the feeder A C (very judiciously formed parallel to the stream, to serve as a drain to stop any water which otherwise might issue from the stream, and breaking out below, might poison the whole meadow) is carried into the floaters; and from D to C is itself a floater, and

and irrigates that part of the meadow which falls from D C to E B, having also one inch fall to a foot.

Mr. Smith, who has formed some excellent water-meadows in Norfolk, does not make the beds so wide, and gives the water a more rapid fall. Mr. Smith's beds are generally about 11 or 12 yards wide, having two feet fall from the crowns or floaters to the drains. Mr. Dodd estimates the expense of this meadow, taking it from its swampy boggy state to its present rich luxuriance, at not less than 25*l.* per acre. The produce of this meadow this year (1808) is very great. In the spring, from the first week in March to the 14th of May, Mr. Dodd kept upon it ten ewes with their lambs, at the end of which time he sold the lambs for 40*s.* each. The ewes were afterwards fattened, from which having taken their fleeces, he sold them to the butcher at their original price. As soon as the lambs were sold, Mr. Dodd watered the meadow, and then mowed it, and carried off the hay. He then watered it again, and mowed it a second time for hay. By these two cuttings he obtained six loads of hay, reckoning 18 cwt. to the load, part of which he sold for 5*l.* and 6*l.* per load. From November to the present time (Dec. 31, 1808), he has had four cows upon the aftermath, and doubts not but he shall be able to keep them upon it a month longer, if the season permits. Such a produce as this is sufficient to encourage any one to form a water-meadow, who has but water at command. Let us recapitulate the above.

Omitting

Omitting the ewes* and their fleeces, ten	}	£. 20	0	0
lambs were sold for				
Six loads of hay, at 5 <i>l.</i> 10 <i>s.</i> per load,		33	0	0
Four cows feeding, from Nov. 1 to Dec.	}	4	4	0
31, with the feed remaining,				
		<hr/> £. 57 4 0 <hr/>		

In addition to the above, and in contradiction to the received opinion of the value of water-meadow hay, I ought to state, that in the beginning of this year a cow he intended for the butcher, had after a fortnight's time been glutted with barley-meal, and Mr. Dodd gave her from that time only hay from a rick, which was a mixture of water-meadow hay and other hay. Within three or four months the cow was sold for 20*l.* weighing 85 stone, of 8 lb. to the stone. The hay from a water-meadow adjacent to Mr. Dodd's, is part sold at five guineas per load of 18 cwt. and part kept to feed chaise-horses; and the gentleman who uses the water-meadow hay for this purpose, informs me his horses thrive with it.

By the above water-meadow, added to the improvement of a pasture, as stated in page 240, Mr. Dodd has benefited his occupation so much, that, whereas upon 12 acres he used to keep only two cows and a horse, he is now enabled, by the addition of three acres, having in all fifteen, to keep four cows and two horses (*viz.* a yearling and a nag) throughout the year, together with ten ewes with their lambs from Michaelmas to May,

* These were fattened, and after they were shorn, were sold to a butcher for their original price, when bought in the preceding autumn with lamb, *viz.* two guineas each.

and to sell them as they become fat; to mow his water-meadow twice, and get six loads of hay; to take in agistment stock at 5s. per head per week, so as to produce this year 5*l.* 17*s.* 6*d.*, and to sell some hay.

To his horse Mr. Dodd gives half a peck of corn per day, and sometimes three quarters of a peck, in addition to the produce of his pastures. But it must also be taken into consideration, that he keeps near a score pigs, for which some barley is bought. The above however is a very valuable instance of the effects of improving pasture lands, and particularly by irrigation.

CHAP. XIII.

EMBANKMENTS.

UNDER this head no observations were made to me, nor communications sent.

CHAP.

CHAP. XIV.

LIVE STOCK.

SECT. I.—BREED.

CATTLE—Are kept in this county for two purposes, for beef and for butter; very few for work.

For beef, most graziers prefer those of the Hereford breed, being esteemed the quickest feeders. A few are of opinion, that the Devons are most profitable, being light of offal. But to determine this question with certainty, no one at present is able. Indeed the general observation upon them is, that there are good and bad of all sorts, and that it is absurd to ask which is the quickest feeder. Animals, like men, they say, vary as to their improvement by food, and therefore no one can say in general terms, how much weight of beef a given quantity of food shall produce in a given time, much less can he determine this point as to a particular animal, or a given number of animals of a specific breed; and if no judgment can be previously formed upon this subject of a given number of animals, by men whose whole life has been employed, and whose whole interest has been concerned in points of this kind, how shall they be able to select a given number of the one breed against the same number of another, to determine the question? The only circumstance which they can ascertain with any degree of certainty is, the quantity
of

of food allotted to them ; and here perhaps a question might arise, whether the same spot of land, or the same kind of food, is congenial with both ? and such objections would render the trials infinite, to determine the general question. Those gentlemen who delivered observations upon this subject, seemed to have a favourite breed, and such partiality seemed to be founded upon their own experience, by which, having been more used to one breed than to the other, or perhaps having been more successful with the one than the other, they had imbibed a predilection and attachment for the one in preference to the other. In general, the large beast is preferred to a small one, for this reason : because, as the grazing is principally in the summer (for very few feed beasts, except as stores, in winter), and the pastures are good, it is a received opinion, that large animals upon good land will fatten as quick as small ones. Such is not the case upon poor land ; there, they say, a small animal of the Scotch breed will fatten, where a Hereford or any large animal would starve. To the above observations add the circumstance of the vicinity of Bucks to London, and the reason appears why graziers there prefer the large Hereford and Devon ox, and the short-horned Yorkshire cow, for beef. Upon the whole, the profit of grazing must depend upon the grazier's judgment in buying, and his opportunity of sending to market to the best advantage.

Mr. Westcar prefers, generally, the Hereford ox for grazing, but buys and sells at any time any grazing stock which answers his purpose : he has an opportunity of feeding some beasts in winter, as well as keeping stores.

Mr. Chandler, of Dynton, buys the Devon, but adds also Scotch beasts.

Messrs.

Messrs. T. and J. Kitelee buy any breed which will give a quick return. Mr. T. Kitelee has now (Nov. 1808) a few Herefords as stores.

Mr. Praed grazes Herefords and a few Scots, and keeps a few grazing beasts in the winter.

Mr. Smith, of Aylesbury, buys the short-horned Yorkshire cows before winter, which, if he can buy them at a moderate price, pay well. They may be bought in the autumn for about 10*l.* each, and by harvest will weigh from 90 to 100 stone*.

For the dairy, the favourite cow is the Yorkshire short-horned cow, called the Holderness. This breed of cows, upon rich pastures, is esteemed the most productive. There are however some dairy-men, who prefer the long-horned Leicester. The Suffolk cow is introduced in a few instances, and approved, where the food is less luxuriant. The Alderney is also found in the yards of a few gentlemen, who are more curious in their choice of breed. A principal reason for the preference given to the Holderness is, that after having

* The stone here consists of eight pounds, and the method of speaking of the weight of a beast is generally by the score, thus:

A beast whose whole weight is

Stone,		lb.		lb.		Score.
50	that is,	400	weighing per quarter	100	i. e. { 5 × 20 10 × 20 12 × 20 13 × 20 14 × 10	5
100		800		200		10
120		960		240		12
130		1040		260		13
140		1120		280		14
150		-		-		15
160		-		-		16
170		-		-		17
&c.		-		-		&c.

Such a mode of reckoning is preferable to that of speaking of the whole by the stone, reckoning 14 lb. to the stone, because of the connexion between the quarter and the whole, the number of score pounds in the former being the same as the number of ten stones in the latter.

kept

straw to make manure, and sells them in the spring for the dairy.

Opinions are various with respect to the propriety of breeding or buying the stock of cows necessary for a dairy : as to profit, if butter sells well it is best to sell calves and buy heifers, not breed them.

Mr. Hart, of Wing, always buys heifers to supply his dairy, saying, when he breeds for himself the stock does not prosper ; but at the same time he related a circumstance on the contrary side of the question, respecting Mr. Woodman, of Grafton, viz. that all the cows he had were not bred upon his farm, except one, and that they had all the red water except that one.

The cattle in Bucks are generally large ; but it is the opinion of some farmers, that small ones would be better for the land, because the tread of their feet upon the clayey lands would have a less injurious effect.

Cows are either bred by those who keep them, or bought at four years old and sold at eight years old. Many farmers upon the dairies, for want of winter food, are obliged to sell some cows every autumn.

For work, but a few gentlemen keep oxen.

The Marquis of Buckingham has a team of Devons, of which Mr. Parrot, his steward, speaks well.

The Earl of Bridgewater has only oxen upon one farm to do all the work. His Lordship keeps eight teams of Welsh and one of Sussex and Durham oxen. They are all yoked as horses. The account given by one of his stewards was, that they have no corn, but live upon hay and straw cut in equal quantities, mixed for them, and that each ox eats three Winchester bushels per day. These oxen are begun to be worked at three and four years old, and are kept at work three years, and are never shod. Four and five are used in a cart, and

and four in a plough. In the comparative estimate of oxen with horses, it must not be forgotten, that the Earl of Bridgewater uses only *three* horses in a plough.

H. H. Hoare, Esq. at Wavendon, works oxen in the cart, but not in the plough.

Mr. Langton, of Cippenham Court, keeps a team of Hereford oxen, but dislikes them for ploughing.

Mr. Freeman, of Fawley Court, works eight oxen, two in a plough: they are fed in winter upon cut hay and straw, and in summer upon grass.

SECT. II.—FOOD.

For Grazing in Winter.—The chief of the grazing in this county is confined to the summer: whatever beasts are kept after Christmas, are either stored and fed upon straw and hay, or prime beasts, and kept at a great expense upon oil-cake and hay: there are but few exceptions to this practice.

Mr. Kitelee, of Castlethorpe, between Michaelmas and Christmas gives his bullocks a few turnips upon the pastures, and generally disposes of all his bullocks before Christmas, except a few stores in the straw-yard.

At Aylcsbury, a few turnips are given to beasts before they are put to oil-cake.

Mr. Woodman, of Stone, gave the khol rabi* to eight bullocks in November last, before he gave them the Swedish turnips, and approves them highly. He says, that in quality the khol rabi is not at all inferior to the Swede.

* See his account of this plant, in Chap. VII. Sect. 18.

The Earl of Bridgewater feeds beasts in winter stalls with Swedish turnips and hay. Each bullock has one bushel and a half of Swedish turnips per day, and thirteen bullocks have ten trusses of hay, each truss weighing 56 lb. : these bullocks had this year been at Berryfield, at agistment, from Mayday to November, the price 5s., and of two prime beasts 6s. per week each.

Messrs. T. and J. Kitelee, feed a few oxen in winter upon turnips, cabbages, and oil-cake. Oxen grazed thus in winter will pay a farmer if oil-cake is not bought at too dear a rate : but if oil-cake costs seventeen guineas a thousand, it will puzzle any calculator to find out how beasts bought at 20*l.* each, can pay a farmer for twenty weeks keeping, having each five cakes per day, and one quarter of a hundred weight of hay, when hay is to be sold at five guineas a load : and yet I saw ten Hereford oxen, eight of which were so fed, and two had six cakes per day, and as much hay as they would eat ; and I was told the prime cost of the beasts was not less than 30*l.* each !!!

Mr. Smith, of Aylesbury, feeds about fifteen cows upon turnips in the straw-yard, in winter : such cows are to be bought in November and December at about 10*l.* each, which about harvest time will average from 90 to 100 stone : such grazing pays a farmer but little.

Mr. Cox, of Beachington, deviates a little from the general practice of feeding beasts in winter, by giving them turnips in the spring. The beasts are bought in November, and if they are tolerably full of flesh, he gives them an oil-cake at Christmas, when the other beasts are gone off, and then turnips.

Strickland Freeman, Esq. of Fawley Court, grazes beasts in winter. Last year he fattened twenty-two
steers

steers and heifers of the short-horned Yorkshire breed; two years and a half old. They had only oil-cake and cut hay: the oil-cake was bought at sixteen guineas per thousand, and the beasts cost from 5*l.* to 5*l.* 10*s.* the feeding. They were put up to fatten about Christmas, after having been offered for sale at 14*l.* each, and refused at market. At the latter end of March and beginning of April, they were sold fat from 90*l.* to thirty guineas each. Such was the account given by his steward, Mr. Forster.

Near Olney a few turnips are given to grazing stock, if the hay crop does not *hold out*; but the farmers there prefer hay to turnips, except the Swedish turnips, of which they reckon one acre will go as far as two of the common turnip.

Food for Cows in Winter.—Hay is invariably the food for cows in winter upon the dairy farms, and of this the general allowance is from two to three tons per head. If then a cow requires for her summer keep two acres, scarce less than two will be necessary for her winter's keep. In Chap. VIII. Sect. 5, a question is started, which seems here to find its answer: for to those who are acquainted with the value of artificial food (I mean the cabbage tribe, turnips, &c.) if we appeal, what quantity of arable land will they allow to produce food for a cow in winter? they will answer, Not an acre. Surely then the question, whether much pasture land might not be converted to tillage, and yet the same quantity of the same stock be kept? becomes now still more interesting. It is not necessary to produce examples of the use of hay as the food for cows in winter, upon the dairy farms in Bucks. If it be objected to the use of turnips, as a substitute for hay in winter, that they give a taste to the butter, which is very unpleasant,

pleasant, it should be replied, that there are means of preventing that taste by a proper use of boiling water, of which one part is mixed with three of milk, when it is put into the leads as it comes from the cows; and by this method not only the taste of the turnip is corrected, but the cream rises quicker and thicker.

At Aylesbury, a few turnips are given to cows in winter, by one or two farmers.

Mr. Graves, of Westbury, feeds his cows in winter upon sainfoin and meadow hay.

T. D. T. Drake, Esq. of Shardeloes, feeds cows in winter upon cut hay and straw, in the proportion of one of straw to two parts of hay: by cutting, his cow-keeper says one-third of the food is saved. Mr. Drake was advised to feed his cows in winter in stalls: he followed the advice, but soon found they wasted in milk, and required the attendance of two men instead of one, and therefore discontinued the practice.

Mr. Hayward, of Stoke-Goldington, feeds his cows in stalls, and says they thrive the better. Cows not in milk are fed upon straw, the rest upon hay.

Mr. Davis, of Cheynies, uses potatoes* and malt-dust as food for milch cows.

Lord Carrington feeds his milch cows in winter upon cut hay and straw, and sometimes brewers' grains; to fattening cows his Lordship gives oil-cake with Swedish turnips, six or seven cakes per day to a cow.

Food in Summer.—No other food in summer from May to November 1st, is used, either for grazing or milking stock, but grass. The general practice in grazing is to buy beasts in the spring, and to send them to market before Christmas, except some prime or

* See Chap. VII. Sect. 23.

choice beasts. Many who graze, agist stock also from 3s. 6d. to 6s. per week, according to the value of the pasture and the quantity of stock agisted. It is, however, feeding a beast at a very dear rate, to pay 6s. per week for him from Mayday to November 1st (which cost at first 20l. and must be kept a month perhaps after he returns from grass before he is slaughtered), if he does not weigh more than 140 stone by December.

Mr. Swannell, of Filgrave, grazes Hereford and Welsh beasts, and feeds them in summer, one beast upon two acres of pasture. Having arable land, and being able to winter beasts, he keeps store cattle to follow those which are fattening.

Mr. Cox, of Beachington, in Whaddesdon, allows one acre and a quarter of pasture to a grazing beast.

At Berryfield, Mr. Rose allows one acre and a half to a grazing beast, and says it is very hard stocking to allow an acre and a quarter only.

Mr. Praed, at Tyringham, allows two bullocks to three acres of pasture.

Food in summer for cows is almost universally two acres to a cow. It is to be observed, that in this allowance for a cow as well as for oxen, stated above, sheep are also fed; but that account is reserved for the Section appropriated to them.

Mr. Hayward, of Stoke-Goldington, keeps a cow to two acres of pasture.

Upon extremely rich pastures, as at Whaddesdon, it is not esteemed so beneficial to the farmer to keep a dairy as to graze oxen; but a question arises in my mind upon this subject, which from the practice adopted at Fawley Court, I have no hesitation in laying before the Board for experiment, whether, if in such

cases cows were milked* three times a day, a much greater return would not be made by cows than by beef? And an additional question may be started, whether some abridgment of food, I mean of the pasture, by confining the cows in milking houses in the middle of the day, might not be attended with beneficial effects?

SECT. III.—MANAGEMENT.

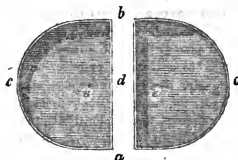
WITH respect to fattening of beasts, no other exists but that which is to be derived from good pastures. A good Buckinghamshire grazier, however, daily watches well the improvement made in a beast, and sells accordingly. If an animal is thrifty, he improves it as long as he can: if not, he sells it as soon as he can, remembering the old maxim, "*the first loss is the best*," and in neither instances forgetting, that "*quick returns and ready money*," is that which gives life to commerce.

Management with respect to the dairy is neat and simple. Cows are kept from four years old so long as they are valuable (that is, good milkers), or sold at eight years old to London milkmen, or graziers, unless disposed of before that time for want of winter food. The calves are generally sold to sucklers at an age from

* By this practice a wager was won not long since in Norfolk, upon a question between two gentlemen, which had the best breed of cows, and that was to depend upon the quantity of milk. The gentleman who milked his cows *three* times a day produced the most.

four to twelve days old, except a few which are fattened or kept to supply the dairy. Those intended for the dairy, either at home or elsewhere, are chosen by their white faces, white eyelids, and white noses; calves with such points will generally sell for 5*s.* each more than others. The cows are milked in the summer in one corner of a field, or in a milking-house*, by men, and carried home in pails hanging upon a wooden shoulder sling (as it is called). At Fawley Court only, the dairy-maid milks as well as the men; and at Aylesbury some milk is carried home in a large tub swinging upon a frame supported upon an axle and two wheels.

In general, the receptacles† of the milk are made of lead, but few wooden trays are used. At Fawley Court, Mrs. Freeman uses trays made of tin, in the form of *GD* thus:



They are placed upon frames of deal: *ab* the breadth, is 2*ft.*; *cd* is 18*in.*, and the depth at *ee* (the holes for the milk to be drawn out) is 9*in.*; from *cc* the depth goes on increasing to *ee*. Mrs. Freeman

* See *Platz V.*

† See *Chap. III. Sect. 2.*

had also stone trays, but those of tin were preferred. The observation made was, that lead is not esteemed wholesome, and that the cream rises as soon and as thick in tin as in leaden trays, and that the tin trays are much less expensive.

In most dairies the milk is skimmed every twelve hours, twice in summer, and oftener in winter. The cream from the first two skimmings is put into the cream cistern to make the first butter, and that which is afterwards skimmed, makes what is called an *after butter*. The milk is in many instances skimmed five and six times: in this practice I found but one deviation, which was at Fawley Court: there Mrs. Freeman skims the milk only once, and that after twenty-four hours. When the milk has been thus skimmed, the invariable practice is to convey it into the bog-tub*, wheresometimes corn is mixed with it, and from which the pigs are regularly fed. No cheeses are made, except in the summer a very few cream cheeses by particular persons, for Buckingham, Aylesbury, and Wycombe markets, and a few at Fawley Court by Mrs. Freeman. It is by no means a common practice, but at Stoke-Goldington, Mr. Hayward, after once skimming the milk *doubles* it, that is, puts two leads of milk together, making the milk now double the depth it was before, and thus skims it twice or thrice, or as often as it will admit of being skimmed. The skimming dish is made of tin, circular, being about a foot in diameter, with holes in it, and a handle upon the top of it.

Butter is made twice in a week, in churns usually turned by a horse (See Chap. III. Sect. 2). The time usually given for the butter to *come*, is an hour and a

* See Chap. III. Sect. 2.

half. I watched one churn which held eight dozen*, and found it went round forty-five times in a minute. I had no where an opportunity of trying or learning the degree of heat in the churn.

The butter made in Bucks is esteemed very good. Its colour, firmness, and flavour, are excellent.

The manner of sending butter to London, gives the dairymen but very little trouble. The butter is made in lumps of 2 lb. each, and is packed into a basket made of oziars, which is called a flat. Flats are parallelepipeds of different sizes, but all of the same depth, viz. 11 inches. They hold from three to ten dozen of butter; that is, from 36 lb. to 120 lb.; they have each on three of their sides, three marks, one on each side, viz. a figure to denote the number of dozen pounds which the flat holds, a letter to denote the farmer's name whose butter it carries, and the name and residence of the carrier. These flats, together with the cloths in them, are the property of the carrier who receives the butter, the carriage of which is paid by the butter factor in London. The only trouble which the dairyman has, is to carry his butter upon a horse to the nearest point where the carrier passes, to make his agreement with his butter factor, and monthly or otherwise to receive his money.

Quantity of Butter.—It is by no means easy to get at this: the accounts are various.

Mr. Graves, of Westbury, keeps 20 cows, and considers the quantity of butter he makes, to be weekly

* This is the way of speaking of the quantity of the butter, and means a dozen of pounds in weight, reckoning 17 oz. to the pound, one ounce being allowed for waste.

6lb. per cow, taking the young with the old. When I called, Mrs. Graves had then sent off her weekly quantity, viz. ten dozen. But this was the summer account only.

Mr. Hayward, of Stoke-Goldington, keeps 20 cows, sells his calves at two or three days old to sucklers, and produces, upon an average, 4 lb. of butter per week from each cow, throughout the year. The cows are dry from six to eight weeks in a year each.

At Whaddon Chase, the average of cows giving milk, is 44 weeks in the year, and the quantity of butter 5 lb. each cow per week.

A gentleman, to whom I am under great obligation for his kind attention to my enquiries, writes thus: "Amongst the questions put by you, when I had the pleasure of seeing you here was this, what quantity of butter will a cow give, upon an average of 40 weeks? I have repeatedly enquired, and do not think it will exceed 5 lb. per week. The price of butter for this winter half year, that is, from Michaelmas last, is 17*d.* per pound. The purchaser is at the expense of carriage to London.

At Wing, the account in one dairy was 15 dozen of butter in the summer, from 27 cows, and in the winter 7½ dozen from 20 cows. The opinion of the person who manages that dairy is, that 6 lb. of butter per week from a cow, is more than the average there for 40 weeks, and that for the whole neighbourhood it cannot be stated at more than 5 lb. per cow.

The following is an account of the produce of the cows of a gentleman in Bucks, which he assures me is correct.

In 1798, the produce of 25 cows was	£. 13 17 0½ per cow.
1799, _____ 25 _____	12 18 2
1800, _____ 28 _____	14 13 0
1801, _____ 28 _____	16 8 1½
1802, _____ 27 _____	15 5 10
1803, _____ 24 _____	14 18 3
1804, _____ 24 _____	15 18 7

The average produce of a cow, from this statement, is 14*l.* 17*s.* per ann.; and this includes the butter sent to market, the calves sold, and the produce of the hogs fed upon the skimmed milk, which last is thus stated :

In 1798 the hogs and porkers paid	£. 75 8 2
1799 _____	75 11 2½
1800 _____	90 0 0
1801 _____	100 0 0
1802 _____	125 0 0
1803 _____	81 0 1
1804 _____	72 2 11
	<hr/> £. 619 2 4½ <hr/>

The above is an account from land of very good quality, and I trust the liberality of the gentleman from whom I received it, is too great, to suffer him to be offended with the following observation, viz. if the dairy farms produce no greater profits, it is wonderful how the rents can be paid.

The following account of the butter produced upon a small farm in the county of Norfolk, was sent to me as Secretary to the Agricultural Society of that county, and with proper certificates.

In 1797, the produce of butter only from 12 cows, was 63 firkins sold.

1798,	_____	12	—	57
1799,	_____	10	—	49
1800,	_____	10	—	49
1801,	_____	10	—	38
1802,	_____	10	—	38
1803,	_____	9	—	29
1804,	_____	9	—	28
1805,	_____	10	—	45
1806,	_____	10 & 13	—	59
Add to the above, butter used in the house,				25
Total				465 firkins.

By this account it appears, that 103 cows produced 26,040 lb. of butter, the firkin being 56 lb. Here the average produce of the butter only of a cow, at 1s. 3d. per pound, was 15*l.* 16*s.* per ann. exclusive of calves and the produce of the skimmed milk.

From the best information gained, the average quantity of butter from a cow for forty weeks, is 5 lb. per week, and the average price last year (1807) was 15*d.* per pound; at present (1808) it is 17*d.* per pound.

Hence, if the price of butter be taken at the medium between 15*d.* and 17*d.* per pound, and a cow gives 5 lb. per week for 40 weeks, and the calf be estimated at 1*l.* 2*s.* the produce of a cow will be 15*l.* 5*s.* 4*d.* by butter, and a calf.

Calves—Generally are sold from the dairy farms to sucklers, at an age from four to twelve days old, except a few, which are kept to supply the dairy; for the dairymen either breed or buy heifers for the dairy at three years old, and sell them at seven or eight years old.

Mr. Turney, of Brickhill, sells his calves at Leighton, in *Beds*, about eight or ten days old. The average price

price is 30s.; but in the spring of this year (1808) calves have been sold so low as 5s., and for several weeks successively, for not more than 10s. 6d. and 12s. each.

Mr. Freeman, of Fawley Court, brings up calves, and at a proper age replaces the old cows which are turned out of the dairy. Those of the heifers which are not taken into the dairy, are fattened at three years old, and the steers at four; the latter are sometimes worked, but not invariably so, as the Devons are chiefly employed for that purpose.

At Fenny Stratford, heifers *come in* with a calf at three years old, and are fattened at six or seven, or before, if they prove barren.

Mr. Hayward, of Stoke-Goldington, sells calves about two or three days old, upon an average, for 22s. each, to sucklers at Leighton.

The practice of suckling calves in Bucks, is declining. Those who suckle keep the calves in pens, boarded and kept as clean as possible. A small crib is placed at one end of chalk, of which they have a handful each every day.

— Ward, Esq. of Newport Pagnel, pays great attention to cleanliness in suckling of calves, insomuch, that he ties them up whilst they are with the cows, to prevent them from licking any dirt or filth upon the cows. By this care, and by giving chalk, the calves are not bled before they are slaughtered, and no veal is whiter.

At Lord Carrington's, the calves are tied to a crib by the neck, in the same manner as fatting stock.

Mr. Foulter, of Amersham, suckles a few: he had killed one when I was there, which weighed 22 stone 6 lb. of 8 lb. to the stone.

Mr.

Mr. Forster, of Wendover, used to suckle; but he found the sale of calves so precarious, having often received from his salesman not half what he expected, that he has given up the practice.

Mr. Davis, of Cheynies, suckles a few. Calves thus suckled are sent to Smithfield, to be sold by salesmen.

Distempers.—The most prevalent distemper is that of making red water. The method of discovering whether a cow has this distemper, is to drive her into water, and she will instantly give proof of it. This distemper seems to abound most upon wet pastures, and to be most fatal to cows not bred upon them. Dr. De Salis, at Wing, by under-draining and treading abundantly a very wet and boggy pasture, has prevented this distemper, which used to attack cows fed upon it.

An excellent remedy for this distemper, is to give a cow a quart of milk impregnated with a red hot iron, once or twice; and if that fails, to give her British oil, which is to be bought at any druggist's shop.

The garget in the dug and the garget in the limbs, are cured at Wing by two handfuls of salt put into spring water and given as a drink. When the garget in the dug arises from bad milking, or from any blow upon the dug, the best remedy is to bathe the dug with Goulard, called the *extract of Saturn*, of which take one part in measure and put it to five of water, and let the dug of the cow be bathed for ten minutes: if this remedy be applied immediately, it seldom fails of curing. Goulard may be very easily made, and is a very cheap medicine. The recipe is, "take of litharge, one pound; of the best vinegar to be procured, two pints; put these together into a glazed earthen pipkin, and let them boil, or rather simmer, for an hour

hour or an hour and a quarter, taking care to stir them all the while with a wooden spatula. When the whole has stood to settle, pour off the liquor which is upon the top into bottles, to be used as directed above."

Many farmers cure the garget in the dug by cutting a hole in the dewlap, and putting in a small quantity of hellebore to act as a seton. This remedy is in high repute.

The scouring of calves is cured by Mr. Dodd, of Cheynies, by sprinkling their loins with cold water. Mr. Davis, of the same place, gives them Biggs's cordial.

SECT. IV.—SHEEP.

BEFORE we speak of the management of sheep, it is necessary we should mention the terms by which their age is denoted. As in other counties, so here, sheep are called lambs until they are one year old; after that they are called *tags*, which in Norfolk are denominated *höggets*, *huggits*, and *hogs*. As soon as they are shorn, which is usually when they are about a year and a half old, they are called in Norfolk *shearlings*, and in Bucks *shear-hogs* (vulgarly *shartogts*). When they are two years and a half old they are shorn again, and then in Norfolk are called *two-shear* sheep, but in Bucks their age now is denoted by their teeth. When a sheep is about a year and a quarter old, it loses two of its lamb's teeth in front, and has two broader in its room; when it is two years and a quarter, it loses two more lamb's teeth, one on each side of the new teeth,

BUCKS.] X and

and then is called *two-toothed*. In the next year the term in Norfolk is *three-shear*, but in Bucks *four-toothed*; and in the fourth year the term in Norfolk (if any sheep are kept so long) is *four-shear*, and in Bucks *six-toothed*, and in both counties *full-mouthed*. Hence, a tag, in Bucks answers to a haggot.

a shear-hog,	—	a shearling.
two-toothed,	—	a two-shear sheep.
four-toothed,	—	a three-shear.
six toothed, or	} —	{ a four-shear, or
full-mouthed,		
		{ full-mouthed.

Neither of these methods of denoting the age of sheep is good, because neither of them will give the age with precision, the time of shedding lambs' teeth being very uncertain*, and that of lambing various, and of course not always the same between it and the shearing.

The method of calculating the weight of a sheep, by allowing 8 lb. to the stone, is much neater than that by 14 lb., as it affords an analogy between the whole weight and the quarter, easy to be remembered, and very ready for practice; thus:

	stones.	lb.	lb.
A sheep whose whole weight is	5 weighs per qr.	10 i. e. twice	5
	6	12	6
	7	14	7
	8	16	8
	9	18	9
	10	20	10
	&c.	&c.	&c.

That is, a sheep whose whole weight is *five stones*; weighs *twice five pounds* (10 lb.) per qr. &c.

* Some sheep have been known never to shed their teeth.

Breed.—The principal object to be attained by sheep in this county, is to produce fat lambs for London market as early as possible. Hence those sheep which will produce the earliest and the greatest number of lambs, are most valuable; for whilst, after having kept lambs from the time of yearning to Midsummer, the Norfolk breeder gets from 20*s.* to 25*s.* a-piece for his lambs, the Buckinghamshire farmer gets in the spring from 35*s.* to 40*s.* each: for which purpose, the Dorsetshire breed seems to be most esteemed, but not the most prevalent; next to these the Gloucester, and then the Berkshire. South Downs are gaining ground in Bucks, amongst such farmers as pay attention to wool and grazing.

Mr. Smith, of Aylesbury, informs me, that he put a Gloucester ram to six score ewes, and that many of the ewes had three and some four lambs.

In general, Mr. Smith observes that he gets 30 lambs to a score ewes of the Gloucester breed; but that the Berkshire ewe, crossed with a Leicester ram, produces most lambs. The Gloucester ewe, crossed with the South Down ram, produces a lamb too small in size*.

Mr. Langton, of Cippenham Court, keeps the Dorsetshire and Somersetshire ewes for early lambs: they take the ram in May, and yearn in October. The method of making ewes *blossom* (i. e. willing or desirous to receive the ram), is to increase the richness of their food, by first putting them to inferior food, and then giving them vetches, or other food equally rich, having previously kept the rams and ewes apart from each other.

* Mr. Smith says the Gloucester breed pays most: Mr. Smith keeps Gloucester, Wiltshire, and Berkshire.

Mr. Heath, of Wycombe, and many other farmers, value the Wiltshire ewes, as giving a plenty of good milk, and therefore very proper for breeding lambs to be fattened for London : they are best when crossed by a South Down ram. Mr. Heath sold many lambs from this cross last spring (1808) for 40s. each ; but Mr. Heath keeps chiefly South Downs, one to an acre, the breed of which he approves highly.

Mr. Allen, of Chequers, keeps Wiltshire ewes, which he crosses with South Down and Leicester rams : the South Down are best for this purpose in Mr. Allen's estimation, but the country in general prefer Leicester rams. Surely upon this question, it is strange there should be dissention. The South Down ram with the Wiltshire ewe, must produce the best wool ; and as breeders in themselves, South Downs return of lambs, compared with Leicesters, in the ratio of more than five to four, if I may judge from the number of lambs of both breeds, which have been delivered to me, as Secretary to the Norfolk Agricultural Society, by shepherds, in claim for the premiums offered by that Society for several years past to shepherds, for rearing the most lambs from a given number of ewes. From the statements delivered to that Society it appears, that not one shepherd has gained a premium whose sheep were of the Leicester breed, nor has the average produce of lambs of that breed exceeded 20 to a score ewes ; whilst the shepherds of the South Down flocks are continually carrying off the premiums.

Mr. Taylor, of Marlow, crosses the Wiltshire ewe with the South Down ram, for fat lambs for London market.

Mr. Chaplin, of Aylesbury, buys Wiltshire and
Berkshire

Berkshire ewes, to produce lambs to fat for London market.

Mr. Langton, of Cippenham Court, who puts rams to ewes very early, as has been stated before, never trusts to one ram only, and in this respect breeders would do well to imitate him: for there is now no doubt made of the doctrine of superfœtation; and from a remarkable circumstance which occurred lately in the flock of a breeder of sheep in Norfolk, there is strong reason for supposing, that two rams amongst a given number of ewes, will get more lambs than one ram alone. Mr. Seppings, of Creak, in Norfolk, had a flock of Norfolk ewes, to which he put Norfolk and Leicester rams. Several of the ewes which had twin lambs, had one lamb a true Norfolk, and the other a half-bred between the Leicester and the Norfolk. I do not recollect the exact number, but it was between 50 and 100 ewes which were so circumstanced. This fact leaves room for supposing, that two rams effected more than one would alone.

Mr. Forster, of Wendover, used to keep Wiltshire ewes, because they were more proper for the commons upon which he kept them: now he keeps the Berkshire, which he crosses with the South Down ram. He breeds lambs, partly to fatten for London market, and partly for stores: but Mr. Forster says, the Dorsets are the best breeders, and bring the earliest lambs: they produce, upon an average, 35 lambs to a score ewes; whereas the Berkshire breed, scarce more than 22 lambs to a score ewes. Mr. Forster sometimes purchases rams out of the droves of lambs going to London, for 50*s.* each: last year he had one from Sir J. Dashwood King, for which he gave four guineas.

Management.—In the dairy-farms there appeared but one method of managing sheep, which was, to buy ewes with lamb in the autumn, to keep them in winter upon hay, to fatten their lambs and send them to London market in the spring, and the ewes afterwards in the summer. This is the universal practice of those who have no folding, and the number of sheep kept is, upon an average, nearly two to five acres.

Upon the Chiltern Hills, the general practice is to buy ewes and wethers, the former to produce fat lambs and then to be fattened, and the latter to be fattened. For instance, a farm of 400 acres has 300 sheep—200 wethers to be fattened upon turnips, and 100 ewes to produce lambs to be sent fat to market, and then to be themselves fattened. This, Mr. Jagger, of Beaconsfield, informed me, was the common practice of that neighbourhood, and this, with very little deviation, seemed to be the method of managing sheep with most of the best farmers.

Mr. J. Kitelee breeds half his stock ; he also buys ewes, and fats half his lambs for London market, and keeps half as stores : of the stores, part are kept for breeding, and the rest fattened as tags.

Mr. Moberly, of Halton, keeps about a sheep to two acres, breeds his own stock, and sells tags : he folds his ewes and lambs.

Mr. Swannell, of Weston Underwood, breeds sheep, and fattens some : he sells shear-bogs.

Mr. Hayward, of Stoke-Goldington, breeds Leicester sheep : he keeps rather more than a sheep to an acre, folds as much as possible (about eight score sheep), and fattens them upon turnips in the second year.

Mr. Woodman, of Stone, breeds a few sheep, and
buys

buys others of any age for grazing: he folds them, and fattens some so old as four years and a half.

Mr. Whitworth, of Cold Brayfield, breeds sheep, folds them, and keeps them till they have been shorn twice, and then fattens them upon turnips.

Mr. Grove, of Farnham, keeps South Downs, and sends tags fat to market.

Mr. Bithrey, of Snelson, keeps six score Leicester ewes, and had this year seven score and ten lambs.

At Wendover some sheep are bred, and sold as fat lambs in London; others are kept on or bought for folding, and fattened at four years old upon turnips.

Mr. Forster sends fat lambs to market so long as they will fetch a guinea each. He puts wethers to turnips in November, and sells them generally a little after Christmas from 45s. to 50s. each.

Dr. De Salis keeps 300 sheep, chiefly South Downs. He breeds and buys ewes, sells fat lambs and fat wethers three years old: he folds his breeding and store sheep.

Mr. Sheppard, of Thornton, breeds sheep, fattens about fifty lambs, and also shear-hogs, which are taken from the fold in August, and become fat before and at Christmas; but the general practice there is to fatten sheep when they have been shorn twice.

Mr. Langton, of Cippenham Court, breeds very early lambs, so as to get rid of them three weeks after Easter, by which means he is enabled to mow his clovers, which otherwise must have been fed by his sheep. Mr. Langton also keeps a fattening wether flock, which he buys when lambs, and fattens as tags. In September 1808, he had eight score South Downs fattening for London market in February 1809, which in all probability would weigh from nine to ten stone each.

Mr. Chaplin, of Aylesbury, fattens ewes and lambs for London, and keeps about three score for folding.

Mr. Allen, of Checquers, fattens lambs for market; he keeps some for stores and for folding, or (as it is properly called) as *working* sheep, till they are six-toothed, then they are fattened upon turnips and sold. Mr. Allen buys also tags for this purpose.

At Wing, and on all farms of a mixed nature, besides the ewes and lambs which are fattened for market, a flock is kept for folding, and after *working* one year is fattened.

At Brickhill sheep are kept about two to three acres, and folded. They are bought four-toothed, kept two years, and then fattened; or bought six-toothed, kept only one year, and then fattened. Mr. Turney buys them one or two years old, keeps them one year, and then fattens them: but Mr. Turney observes, that folding upon sandy land has not so good an effect as upon heavy land.

Mr. Pope, of Chesham, breeds lambs for fattening, and keeps some as stores: he buys some tags and some two-toothed, works them on his fallows, and then, when they are full-mouthed, fattens them upon turnips. If turnips fail, Mr. Pope gives them oil-cake, half a cake to a sheep, with turnips.

R. Ward, Esq. of Hyde Lodge, near Chesham, fed his ewes and lambs in order to fatten the lambs for market last spring, upon the following mixture, for want of other food:

Of brewers' grains,	2 parts by measure.
bran,	2 ditto ditto.
cut barley straw,	4 ditto ditto.

The lambs were fattened in six weeks.

Lord

Lord Carrington keeps South Down sheep, fats lambs, keeps stores for folding and for fattening. See the account in Chap. IV. Sect 1, page 60. His Lordship fattens sheep upon oil-cake and Swedish turnips: of oil-cake each sheep has one cake and a half per day. When he can get pale malt-dust the ewes have a quart each every day.

Mr. Grace, of Risborough, keeps ewes: he fattens a few lambs and a few sheep; he also sells lambs and full-mouthed sheep, keeping the rest as *working* sheep for folding. In the summer he is obliged to send some ewes and lambs to grazing farms, at agistment, for 9d. per couple per week.

Mr. Ayton, of Missenden, keeps the South Down sheep for lambs for market. He sold them this year (1808) at 10d. 9½d. and 9½d. per lb. Mr. Ayton folds his store sheep.

Mr. Rose, of Upper Winchendon, keeps 300 sheep upon 300 acres. He breeds, and keeps on the lambs for stores, and brings them round for fattening at three months old.

Mr. Freeman, of Fawley Court, never folds his sheep. He keeps 200 breeding ewes, at present Leicesters, the produce of which he keeps for stores, and brings round to market as early as he can.

Recapitulation.—From this statement, and the account given in Chap. IV. Sect. 2, it will be seen, that the number of sheep kept upon the dairy farms are nearly two to five acres, upon the arable farms five to six acres, and upon those of a mixed nature five to seven acres: that upon the dairy farms, where there is no folding, ewes with lamb are bought in the autumn,

tumn, and the lambs and ewes fattened in the spring and summer following; and that excepting a very few instances upon the arable farms, and those of a mixed nature, as many lambs are fattened as possible, with their ewes, and that stores are kept as *working* sheep for folding, and then after a certain time fattened. Such as are not wanted for folding or stores are sold.

Observation.—There can be no question upon this management of sheep with respect to the fattening of lambs, so long as they will fetch from 35*s.* to 40*s.* a piece at market. This is an advantage to be derived only by the vicinity of a county to a large and populous city or neighbourhood.

In such a situation, 100 breeding ewes will produce an annual profit from 50*l.* to 75*l.* more than a situation destitute of the same appendage. The only question that can arise, and that is important, is, how far it is advantageous to keep sheep for the express purpose of folding, according to the maxim, "*their meat for their manners,*" for that this is the fact, is evident from the account before, otherwise a farmer would return sheep to market at as early an age as possible, as soon as fat. It is generally allowed, that folding injures sheep, although it makes the wool better. If that is the case, the plan pursued, as stated in Chap. XII. Sect. 3, under the article *Sheep's-Dung*, is wise, and might be advantageously pursued even by those who have flocks of their own: because their own flocks might then be managed so as to be returned to market as quick as possible; and thus the system of early maturity and quick returns be effectually carried into execution.

Wool.

Wool.—Mr. Langton clipt of wool, neither long nor short, a todd from seven sheep, which he sold at 38s. per todd.

Mr. Smith, of Aylesbury, sold his wool, which was neither long nor short, at 1s. per lb. and he reaped 7 lb. per fleece. Short wool was sold for 48s. and 50s. per todd.

Distempers.—Mr. Forster, of Wendover, washes sheep for the scab with tobacco water and turpentine. For maggots produced by the fly, with brimstone.

At Risborough many young sheep die upon the hills of the staggers and red water: but when two or more years old, they are not so liable to these distempers.

Another disease which is said to affect sheep, is called the *wood evil*. Mr. Greaves, of Hillesden, complained of it particularly. He says it affects the joints of the legs first, and afterwards the whole body; the sheep then waste away and die. Mr. Greaves pointed out a particular piece of land containing about twenty acres, which inevitably produced this evil, if sheep were turned upon it before Midsummer. This is a pasture lying high, full of furze, and very wet.

A stronger instance of the effect of drainage towards rendering land fit for sheep, cannot be given, than is to be seen at Sherrington, near Newport: upon the common there, near the Ouse, all sheep turned upon it used to rot, and scarce one could be fed for slaughtering, but crows would watch for the dying bodies: since the enclosure the water has been completely taken off, and many score sheep are fattened upon it.

The *staggers* has been found to be caused by a fly, which is a species of the *æstrus*. In hot weather this fly deposits its eggs so that sheep snuff them up into their nostrils,

nostrils, and the eggs work their way into the head, where they are found in the form of a maggot in a bag of water, called an *hydatid*. In this disease the skull grows thinner and thinner as the disease increases, and in some instances becomes protuberant. Trepanning has sometimes been used with success, and sometimes the maggot has been taken out by a cobbler's awl. Sir John Dashwood King puts a question upon this occasion, whether it is not wrong to destroy bushes, and particularly the juniper tree, under which sheep might take shelter in hot weather?

SECT. V.—HORSES.

NOTWITHSTANDING the number of horses used in the plough in this county is so great (for it is in many places five and six), that it should seem but little attention to economy is observed, yet the method of feeding horses is such as to shew, that in one point essentially necessary in the management of them, the Buckinghamshire farmer is by no means behind the farmer of any county; for whilst in some places eminent for their husbandry, we see horses after work running about pastures, fatiguing themselves by their own unnecessary exertions, and destroying by their feet more food than they consume by their mouths, and than is necessary for the keep of double the number;—we find it an invincible practice in Bucks, to soil horses in the stable or the yard, in summer, upon vetches or clover; and in the winter upon bean, pease, and oat-straw, cavings (called in some counties coulder), and hay and corn. In the county of Norfolk, some care has been taken to
awaken

awaken the minds of farmers to pay attention to this point of economy. The Agricultural Society there has taken up the measure, and individuals are exerting themselves, to produce practical plans of lessening the consumption of food by horses, deserving of the imitation of the public. In the North, J. C. Curwen, Esq. of Workington, has set an example in this instance, which does him great credit. His method of feeding horses upon steamed potatoes, if not strictly followed, will undoubtedly be looked up to by all who know the value of economy in this particular; and not a question can be made, but his exertions will remind many, who are at present regardless of the necessity of considering the subject, and of contriving means, if not superior, at least aspiring to an equality with his, of lessening the great consumption of food made by horses, and by such means, of providing more for the increasing population of the country.

The height of horses in general use in Bucks, is from 15½ hands to 16½ high; their colour black, and tails long. It is very common for farmers either to breed colts, or to buy them at two years old, from 20*l.* to 30*l.*, keep them till they are five years old, and then sell them for 50 or 60 guineas.

Mr. Hayward, of Stoke-Goldington, keeps about four horses to a hundred acres: their consumption in a year, he thinks, is the produce of 15 acres of land. He gives them tares in the summer in the yard; and in the winter, cavings, with cut hay and straw.

Mr. Graves, at Westbury, keeps fourteen horses upon grass, winter tares, and sainfoin, in the summer; and upon bean and oat-straw, with hay and corn, in the winter.

Mr. Pope, of Chesham, finds four horses necessary
for

for 100 acres; and yet six are sufficient for 200. In breaking up sward, he uses four horses in a plough; but in the second ploughing only three.

Mr. Grace, of Risborough, observes, that in that neighbourhood one hundred acres require four horses; two hundred six horses, and three hundred nine.

Mr. Moberley, of Halton, feeds his horses in summer upon tares and green clover; in winter upon bean-straw and cavings; and in spring he gives them hay.

Mr. T. Kitelee uses three horses in a plough: he keeps 12 to cultivate about 350 acres of land, and feeds them upon tares in summer. In summer they do double journeys, in winter single; but not more work in the one case than in the other.

Mr. Ayton has his horses soiled in the yard. His bailiff says, some farmers allow their horses two bushels of corn each per week in the winter, with cut hay and a little cut straw; but that this allowance is too often given for the sake of shewing a fine team, not because it is necessary. Mr. Ayton's horses do one journey in a day, from six in the morning to three in the afternoon. This appeared to be too hard work for them, as they were not in such working order as horses ought to be.

Mr. Davis, of Cheynics, allows his horses in winter each one peck of oats per day, and 156 lb. of hay per week. His horses go only one journey in a day.

At Wendover, Mr. Forster keeps his horses in summer upon tares, and in winter upon clover, hay, and corn: one bushel of corn per week to each horse.

In the neighbourhood of Beaconsfield horses are fed in summer in the stable upon green food, tares and clover, and in winter upon hay and corn.

~~It is needless~~ to multiply instances of this sort. Soil-
ing

ing is very general, and if as much care were taken to lessen the number of horses kept, as to preserve economy in the quantity of food upon which they are kept, Bucks might vie with any county in the management of horses.

SECT. VI. AND VII.—ASSES AND MULES.

WHEN the Earl of Bridgewater came first to his estate at Ashridge, he found the poor there in a most lamentable state of ignorance, and particularly the boys unacquainted with any kind of husbandry, and unwilling to attend to any other employment but that which their mothers and sisters had taught them, viz. the platting of straw and making of lace. His Lordship's first attention, therefore, was to root out this effeminacy in the boys, and instil into them manly principles, and make them serviceable in employments in the field. By constant attention to this point, his Lordship has effected his intention, and instead of seeing great boys 17 and 18 years of age, sitting by their mothers' side platting of straw or weaving lace, you see at Ashridge many much younger occupied in the park, in the different employments of the seasons of the year, with teams of asses to assist their operations. Much interest is now made by boys, to get into these employments under his Lordship; and the boys so employed are found to have much advantage over others, when it is possible to compare the work of the one with that of others.

The Marquis of Buckingham keeps a team of asses for his garden, and they are esteemed very serviceable.

Upon

Upon heavy lands, asses with panniers might be rendered very useful in carrying turnips, or other green food, to carts upon the sides of a field, in order to prevent the evil attending the tread of horses, and the wheels of the cart, upon the ploughed land in winter.

Many asses are used at the potteries at Amersham, to convey that manufacture about the country, and also for the white sand from Chalfont.

There is no particular use of mules in Bucks.

SECT. VIII.—HOGS.

HOGS form an important article in the account of the profits of a farmer in Bucks. Upon the arable farms where the growth of corn arrests the whole attention of the farmers, the management of pigs makes but a small part of their system. They breed some, and keep stores in the yards; but the dairy farmers regularly buy stores, fat them upon the skimmed milk of the dairy, of which they give them the whole, and then sell them as bacon, between Michaelmas and Christmas, and send porkers to London market from that time till the spring. The accounts of the number fattened upon the dairy farms, are various; in the statement of which, I shall suppress the names of those from whom I received them, on account of the jealousy which seems to exist amongst dairymen on that score. With respect to breeders, and those who have in view only the general good to be produced by the communication and dissemination of truth, I shall pursue the same plan which has hitherto been adopted.

Breed

Breed and Breeding.—The breed, in general, is the Berkshire, on account of its being kindly disposed to fatten, and attaining a large size. The Chinese is a favourite breed with some, as is also the Suffolk. There is also a cross between the Berkshire and the Chinese, which is said to give a stronger inclination to fatten. The Berkshire is also crossed with the Suffolk. Mr. Dodd, of Cheynics, has taken some pains in the breed of pigs. He shewed at Smithfield, in 1808, a Suffolk pig nine months old, fed from the first week in November 1807, to the 2d of March 1808, upon barley-meal.

	<i>st.</i>	<i>lb.</i>	<i>oz.</i>
Live weight,	37	4	0
<hr/>			
Dead weight:			
24 hours after being slaughtered,	31	5	0
Blood,	0	6	4
Pluck,	0	7	0
Rough fat,	1	0	6
Entrails,	1	2	0
Feet,	0	1	8
Hair and hoofs,	0	2	4
Lost by evaporation,	1	3	10
	<hr/>		
	37	4	0

Mr. Dodd also produced a fat pig, of the cross between the Essex (Mr. Western's breed) and the Suffolk, at Smithfield, in December 1808. This pig was taken from the sow February 12, 1808, when he was seven weeks and three days old, and was slaughtered December 26th, 1808.

	<i>℥</i>	<i>s.</i>
Live weight,	48	6
Carcass,	40	7
Head,	1	1
Fat, &c.	1	7
Feet,	0	1½
Pluck,	0	5
Entrails,	1	5
Blood 6 lb., hoof, hair, & loss in killing, 13½ lb. 2	3½	
	<u>48</u>	<u>6</u>

As Mr. Dodd was very accurate in keeping an account of the expenses attending this pig, they are stated thus :

Value of the pig when taken from the sow, £. 0 14 0	
Food purchased for him to the 12th of August, being 26 weeks,	1 12 6
Pease consumed, from Aug. 12 to Sept. 24, two bushels,	0 17 0
Barley, 2 qrs. 3 bush. at 45s.	5 6 10½
Grinding ditto,	0 6 4
Total of expenses,	<u>£. 8 16 8½</u>

40 stone. 7 lb. of pork, at 6s. per stone, £. 12 5 3	
Expenses,	8 16 8½
	<u>£. 3 8 6½</u>

To the above expenses should be added something for attendance, together with the supply of vegetables which the pig had from the garden, previous to his being

ing put to feed in September. This pig was very short, and had but little bone. In order to ascertain precisely the quantity of pork by which this pig increased at fixed periods, and at what time he ought to have been slaughtered, Mr. Dodd complied with my request, and weighed him every fortnight. The following is the statement :

The Pig weighed.					Gained in a Fortnight.		
	lb.	...	st.	lb.	lb.	st.	lb.
Oct. 10,	295	...	36	7			
24,	333	...	41	5	...	38	4 6
Nov. 7,	367	...	45	7	...	34	4 2
21,	378	...	47	2	...	11	1 3
Dec. 5,	391	...	48	7	...	13	1 5
22, slaughtered	48	6	...			lost	1 lb.

Upon the above, Mr. Dodd writes thus : " You will perceive, that after the 7th of November my pig fell off in weight, as he did also in food. This, I think, fully shews at what period he arrived at maturity, and ought to have been slaughtered ; a point which you were desirous of ascertaining." Mr. Dodd further adds : " I have lately been crossing my Suffolks with Mr. Western's Essex, and I think the cross will be an improvement upon both. The sows now bring litters of 10 and 12 pigs, instead of six and eight, and I think them healthier (at least I find them more so) than ever I had any at this season of the year." It is remarkable, that in one or two instances of the cross between the black and white pigs in Mr. Dodd's yard, the skin of the white parts of the pigs cracks, but not of the black parts ; and yet the skin of Mr. Dodd's white pigs does not crack.

One fact also must not be passed over unnoticed,

which is, that the colour of pigs is often accidental; for Mr. Dodd shews a beautiful black pig, which was one of a litter of eight, of which seven were all white. The black hog then was accidental, unless it can be shewn that superfœtation took place; a doctrine* which is now clearly established.

System.—The method of giving the weight of a fat hog, is by the score of pounds. Thus a hog of

30 stone is said to weigh 12 score pounds, or 6 score each side.

35 ————— 14 ————— 7

40 ————— 16 ————— 8

45 ————— 18 ————— 9

In this instance of denomination, five times the number which gives the score of pounds in a side, will be the number of stones which a hog weighs.

Pigs are fattened for market upon the dairy farms, either for *bacon*, between Michaelmas and Christmas, or as *porkers* till the spring. They are of the Berkshire breed, and are esteemed the better, the smaller the ear and tail. They are put to fatten in May, and by Michaelmas weigh upon an average 14 score. They are fed chiefly upon skimmed-milk, though some give them barley and pease.

From the time that the bacon hogs go to market to May, porkers are fattened for London. They are killed at home, and sent to salesmen in London to sell at market; the price of which, with carriage, is about 6½d. per stone. The following is a copy of a salesman's bill for selling two porkers at Newgate-market :

* See in page 309, the account of Mr. Seppings' flock of sheep.

Mr. B. 4th May, 1808.

Pigs, 8 st. 4 lb. at 6s.	£.2 11 0
Two heads,	0 2 6
	<hr/>
	£.2 13 6
Selling,	0 1 7
	<hr/>
	£.2 11 11
Paid carriage,	0 3 4
	<hr/>
Paid to R. D.	£.2 8 7
	<hr/>

Note.—Mr. B. is the salesman, and R. D. is the carrier. The carrier received the above on Thursday; they were sold on Friday, and within a day or two the money was paid by the carrier to the person who sent the pigs.

A good farmer, upon whom it seemed that I could rely, told me he could fatten 10 bacon hogs and 15 porkers in a year, upon 20 cows. The pigs are kept upon grass, and brought home into the yard at night, until they are put to milk.

Another, that 30 cows would fatten, in the course of a year, seven or eight hogs, from 16 to 18 score each, sold at one year old, and 40 porkers, of five or six stone each.

Another, that a score cows would fatten 10 hogs from May to November; and from November to May, treble the number of porkers.

Another farmer informed me, that he fattens 14 hogs of 15 score each, by the skimmed-milk of 20 cows, giving them some corn with the milk.

Another farmer, who keeps 30 cows, of which generally 20 are in milk, fattens 12 hogs of about 15 score each, and porkers besides. In the summer very few

give corn to pigs, but in winter it is generally done. Porkers are put up to fatten at about a quarter of a year old, from four to six weeks, and weigh from 5 to 10 stone.

Upon this subject a gentleman, who is very accurate in his observations, says: "As to hogs, the best information I can get is, that without corn, by giving them nothing but skimmed-milk, and that after the third time of skimming, about seven are kept to 20 cows, averaging bacon hogs and porkers. Perhaps you are not aware, that pork is sent to London from this neighbourhood both in winter and summer, so that some dairies chiefly feed the smaller pigs; but the London markets mostly regulate that."

From another part of the county where dairy farms abound, a gentleman states, that "the average of pigs by the score of cows is about six or seven bacon hogs, and about ten porkers." The same gentleman says: "He (meaning the person of whom he is speaking) keeps 20 cows, and fattens 12 pigs in a year, of size. He gives corn to his pigs, excepting in two or three months."

Another account is thus given: "Large quantities of hogs are fed here upon skimmed-milk, which I believe the dairymen in general find more profitable to keep on till they become fit for bacon, rather than sell for pork. These they generally dispose of soon after Michaelmas and about Lady-day."

Such are the facts stated respecting the number of hogs and porkers fattened by the skimmed-milk of cows upon the dairy farms. The accounts evidently vary; and so they must, if it is considered that they depend upon circumstances which vary, viz. the goodness or richness of the food of the cows, and the number of times of skimming the milk.

If

If then an average can be drawn from this statement, the number of hogs of fifteen score each fattened by twenty cows, is eight and a half, and the number of porkers from four to ten stone each, is eleven and a half.

At Whaddon, hogs are taken in as agistment stock, at 5s. 6s. and 7s. per week.

Sir J. Dashwood King values the manure of pigs so much, that he takes in pigs for nothing, to feed the beech nuts, and finds a person to keep them by day, and at night confines them in his farm-yard.

Mr. Forster, of Wendover, keeps store pigs in his yard for the sake of manure. He says it is better to buy them than to breed them for grazing, either as porkers or as bacon hogs, but that no farmers can fatten them so advantageously as the dairymen.

Mr. Chaplin, of Aylesbury, keeps about twelve hogs to twenty cows in milk. He breeds some, and cuts the boar pigs only when they are about six or eight weeks old: in the summer he puts them to fatten at ten weeks old, upon milk only, for at that time they want no corn: when they are fifteen or sixteen weeks old, they are slaughtered at home, and sent to a salesman in London as porkers, weighing eight or nine stone. In winter they require corn, when they are fattened as bacon hogs, and are generally sold to butchers in Aylesbury. Mr. Chaplin sometimes gives pigs steamed potatoes and barley meal: a steamer upon the copper does about four bushels of potatoes at a time, with which he mixes half a bushel of barley meal: sometimes twenty bushels are steamed in a day and mixed in this manner. Such mixture is put into the hog-tub with the skimmed-milk, and the pigs are fed with it. Sometimes no milk is mixed with the potatoes, but the feeder of the pigs says, they thrive best upon it with milk.

milk. The styes are cleaned every day : those who do not fatten pigs so young, cut the sows as well as the boars.

Mr. Smith, steward to Mr. Sheppard, of Thornton, breeds pigs, and keeps them as stores principally upon grass. Some sows are suffered to have one litter of pigs, and then they are fattened upon skimmed-milk : it does no harm in these cases to give them the boar eight weeks before they are killed.

Mr. Kitelee, of Castlethorpe, keeps some breeding cows in his farm-yard, to which he puts the boar, so that they may with their stock be all sold in the spring.

Mr. Smith, of Aylesbury, has a sow which is a cross between the Chinese and the Suffolk, which he says pays him as much profit as a cow.

Mr. Pope, of Chesham, feeds porkers to six or eight stone upon ground barley, at one year old, and sends them to London markets.

Mr. Taylor, of Marlow, breeds pigs, keeps them as stores upon grass, and fattens them at one year old upon barley, from twelve to eighteen score each.

Mr. Hart, of Wing, says, some persons there keep breeding sows, which are suffered to have one or two litters, and then they are fattened : but in general pigs are bought at one year old at Aylesbury or Leighton, kept a year, and then sent as porkers to London, or fattened as bacon. Mr. Hart fattens them upon an average to fifteen score.

A small farmer, a breeder of pigs, informed me, that he once lived with a very good farmer in this county, who used to reckon that he kept a pig to a dozen of butter, and that his cows gave upon an average 6 lb. of butter per week. This would allow ten pigs to a score

score cows : but he added, that some dairymen keep twelve pigs to a score cows.

Mr. Mackie, steward to Owen Williams, Esq. at Horton, has sent porkers to London hitherto, after having been three weeks at barley meal. His breed is a cross between the Chinese sow and a boar whose grandsire came from Arabia. Mr. Mackie has returned between 200*l.* and 300*l.* per annum by pigs fattened for London ; but now barley is too dear for such practice.

Diseases of Pigs.—Pigs are very subject to a huskiness with a bound hide, called the *garget* ; in which case Mr. Dodd, of Cheynies, uses with success a mixture of madder and the flour of brimstone, one pound of each, and puts half a pint into a pail of their food.

SECT. IX.—RABBITS.

THIS is a county not at all suited to rabbits. There are some upon the Chiltern Hills, but no warrens. Upon some estates where the proprietors wish to destroy them, the gamekeepers seem to have too much interest in preserving them. They are very ruinous to a farmer. Upon Mr. Ayton's farm at Missenden, in a field of wheat, one burrow only had destroyed twelve yards square ; what then will be the destruction, when it is considered to what an enormous increase these animals will rise in number, if they are allowed to breed without being checked ?

Sir John Dashwood King keeps ferrets for the purpose of destroying rabbits. These animals, by being confined,

confined, are very liable to be sickly ; whenever that happens, Sir John lets them run about in a barn, and they very soon recover.

Although rabbits are not very numerous, nor any where kept upon warrens, yet not a small number are sent yearly and weekly to London markets from hence. They are kept by poor men in houses : the houses are oblong : there are three or four such at Aylesbury. One of these is fifteen yards long, three yards wide, and about seven or eight feet high. It is built of clay and covered with tiles, and has a room by a roof leaning to it on one side to lay the food. The lockers for the rabbits are ranged one above another on each side of the house, but raised from the floor to secure them from rats. Each locker is about 3 ft. long, 18 in. wide, and 1 ft. high, and its front formed of wire like a cage for birds. Each locker has a drawer for brewer's grains, and a small neat rack over it made of wire, to hold clover. The breeding lockers have an additional locker to them, length 9 in. One man, who is said to have the greatest number at Aylesbury, keeps 200 breeding does and 20 bucks. Another has 140 breeding does and ten bucks : the house of the latter is nineteen yards long and three yards and a half wide. The rabbits are fed four times a day upon grains and clover hay, and cleaned very often : the breed is the common tame rabbit. The young are sent to London, and the dung sold in the neighbourhood : 140 does with the bucks and young, make twenty-four bushels of manure per week, which is sold at 6d. per bushel.

SECT. X.—DUCKS,

Form a material article at market from Aylesbury and places adjacent : they are white, and as it seems of an early breed : they are bred and brought up by poor people, and sent to London by the weekly carriers. One poor man whom I visited, had before his door a small pit* of water, about three yards long and one yard broad : at two corners of this pit are places of shelter for the ducks, thatched with straw : at night the ducks are taken into a house. In one room belonging to this man (the only room he had to live in), were ducks of three growths, on the 14th of January, 1808, fattening for London market : at one corner about seventeen or eighteen four weeks old ; at another corner a brood a fortnight old ; and at a third corner a brood a week old. In the bed-room were hens brooding ducks' eggs in boxes, to be bought off at different periods : ducks six weeks old at that time for 12s. a couple. Besides the above, there are other persons who breed many more ducks than the person now mentioned, and as far as it was possible to discover, I understood this person sends 400 ducks in a year to London. Allowing then forty persons to send only as many, at an average of 5s. per duck, the return of ducks from Aylesbury alone will amount to 4000*l.* per annum. This return has been magnified into

* These pits make an unsightly appearance, and are rather dangerous, certainly incommodious, to travellers, by the side of the streets, and accordingly have been ordered to be removed.

20,000*l.*

20,000*l.* per annum: but upon such conjecture the whole neighbourhood must be taken into consideration, and I have not sufficient *data* to ascertain the truth of it.

SECT. XI.—PIGEONS.

THE dung of pigeons is esteemed useful upon barley, but the injury done by them upon crops at the time of their ripening, and particularly upon pease and tares, and wheat if it be *lodged*, and also upon clover, and any such small seeds, at the time when they are sowing, and sometimes after they are sown, if the dryness of the weather has not been propitious to their vegetating, more than counterbalances any advantage from their manure, or from themselves as food. Indeed, their depredations are sometimes so great, that no one who wishes to be upon good terms with his neighbours ought to keep them; unless they are so situated upon a farm, that they can feed only upon the lands belonging to that farm, or upon those over which the proprietors of the pigeons can claim a right. For *pigeon-houses*, see Chap. III. Sect. 2.

SECT. XII.—BEEES,

ARE every where too much neglected. They are very profitable, and might serve the poor well towards paying

paying their rent. Many a poor man would keep bees had he the means of raising a stock. Surely it would answer the purpose of a parish well, to enable poor men to effect this.

CHAP. XV.

RURAL ECONOMY.

SECT. I.—LABOUR.

SERVANTS.—At Weston Underwood, first man's wages from 12*l.* to 20*l.*, second man's 8*l.*, dairy-maid five to seven guineas, per annum.

At Aylesbury, man-servant from ten to twelve guineas, dairy-maid ten guineas, per annum.

At Stone, man-servant fifteen guineas, dairy-maid ten guineas, per annum.

At Cold Brayfield, first man 12*l.*, second man 7*l.* or 8*l.*, dairy-maid 5*l.* or 6*l.*, per annum.

At Newport Pagnel, dairy-maid 6*l.* or 7*l.* per annum,

At Stoke-Goldington, first man twelve guineas, second man eight guineas, dairy-maid 8*l.*, per annum.

At Filgrave, first man 12*l.*, second man 8*l.*, dairy-maid 6*l.* or 7*l.*; shepherd fourteen guineas and one sheep, per annum.

At Wendover, first man 10*l.*, second man 6*l.*, dairy-maid 8*l.* or 10*l.*, per annum.

At Cheynies, first man ten guineas, second man 7*l.* per annum.

At Whaddon, first man seven guineas, second man 5*l.*, dairy-maid 9*l.* per annum.

At

At Wycombe, man-servant from eight to ten guineas, dairy-maid seven to eight guineas, shepherd 14*l.* per ann.

At Risborough, man-servant 10*l.*

At Lee, first man twelve guineas, second man nine guineas per ann. ; bailiffs from 30*l.* to 50*l.* per ann.

The wages of dairy-maids have risen much within a few years, on account of the lace and straw manufactories, and it is with difficulty they are procured at all.

Labourers.

Ditching.—New, according to the plan pursued in new enclosures, by a ditch two feet wide, and about one in depth, with quicking, that is, putting in one row of white thorn ; and mounding, that is, setting two rows of posts and rails to protect the fence, until it is grown to a sufficient height to protect itself—costs from 40*s.* to 45*s.* per acre*.

At Kimble, this was done at 12*s.* 6*d.* for eight yards.

At Cold Brayfield, common ditching is 15*d.* and 16*d.* per pole.

Scouring or cleaning ditches, called in some counties *out-hollowing*, is 2*d.* per pole of 5½ yards : in some cases from 8*d.* to 12*d.* per rod.

Quicking, that is, planting of white thorn, 6*d.* per pole.

Plashing, at Wycombe, is 4*d.* per rod of 5½ yards.

Harvest.—Men are generally hired for a month, with or without board.

* An acre is four poles, of 5½ yards to a pole.

With board—

At Olney, 2*l.* 10*s.* with gloves and hiring money.

At Filgrave, 2*l.* 5*s.* allowing ten acres to a man.

At Chesham, 2*l.* 12*s.* 6*d.* hiring only a few men, and putting out much of the reaping,

At Fenny Stratford, 2*l.* 10*s.*; and if the harvest exceeds a month, 8*s.* per week, and board, that is, three meals in a day, and two pints of beer.

At Whaddon, from 37*s.* to 42*s.* with board, and two quarts of beer.

At Checquers, from 50*s.* to 60*s.*, hiring six or seven men to 200 acres.

Without board—

At Stone, one guinea per week.

At Checquers, five guineas and three pints of beer, one at four o'clock in the morning, one at 11 o'clock, and one at four in the afternoon; and when they carry the corn, they have as much beer as they please.

At Risborough, four guineas, and four pints of beer per day.

At Castlethorpe, five guineas for five weeks, and a quart of beer per day.

At Aylesbury, 1*l.* per week, and beer.

Day and Miscellaneous Labour.

At Cold Brayfield, in winter, 16*d.* per day, with small beer; mowing barley and oats, from 20*d.* to 2*s.* per acre.

At Newport Pagnel, in summer, 10*s.*; in winter 9*s.* per week.

At Olney, some 9*s.*, others 8*s.*, with milk and small beer.

At Aylesbury, some, in summer, 15*s.*; in winter 12*s.*

12s. per week. Others, in summer, 13s.; in winter 10s. per week; and small beer twice a day in hay and corn harvest.

At Stone, 9s. per week ; but most of the labour is put out by the piece. Women from 8d. per day to 5s. and 6s. per week.

At Filgrave, 1s. 6d. per day, and small beer.

At Wendover, 9s. per week; and in hay-making 12s. per week and beer.

At Missenden, 10s. per week. Women 1s. per day, with two pints of beer.

At Cheynies, in summer, 2s. and 2s. 6d. per day; in winter 10s. 6d. per week. Boys 8d. per day. This price for a boy is high; but Mr. Davis properly observes, it is far better to employ a boy at 8d. per day, than for a parish to pay him 6d. per day for doing nothing.

At Fenny Stratford, in winter, 9s. per week, with beer; 10s. without beer.

At Whaddon, in summer (hay-making), from 13s. to 15s. per week. Some give 8s. per week, with three meals in a day and two quarts of beer. In winter 7s. per week, with a breakfast of bread and milk per day; others 8s. without the breakfast.

At Checquers, labourers earn, by taking work, 2s. 6d. to 3s. per day.

At Horton, from Lady-day to Michaelmas, 15s.;
from Michaelmas to Lady-day, 13s. per week.

At Castlethorpe, labourers 10s. per week.

Reaping wheat.—For this the price is various; the average is 10s. 6d. per acre.

Mowing.—Hay from 3*s.* to 5*s.* per acre; barley
BUCKS.] z from

from 2s. 6d. to 4s. per acre; oats the same; pulse the same.

Thatching.—At Wendover 2s. 6d. per day, and the boy 1s.

Thrashing.—The prices are various.

At Wing, this year (1808), wheat 2s. per load of five bushels, exclusive of cleaning; barley 20d. per quarter, if good; 2s. per quarter, if bad; beans the same as barley.

Hoeing turnips twice, from 8s. to 10s. per acre, and generally done ill.

Fuel.—Coals at Standon, upon the Grand Junction Canal, are 25s. per ton, and waste coals 15s. per ton. To speak generally, a ton in weight measures about 30 Winchester bushels.

At Wendover, the Wednesbury coals are sold at 1s. 6d. per cwt., which is reckoned to be half the price of wood. The Newcastle coals are three guineas per chaldron.

At Fenny Stratford coals are 17d. per cwt., and at Castlethorpe, about a mile from the canal, 16d. per cwt., which, by measure, is about $1\frac{1}{2}$ bushel Winchester measure.

CHAP. XVI.

POLITICAL ECONOMY.

SECT. I.—ROADS.

THE bye-roads of this county are extremely bad, some of them dangerous, and cautiously to be used; they have ruts so deep, that when the wheels of a chaise fall into them, it is with the greatest danger an attempt can be made to draw them out; nay, instances may be produced, where, if such an attempt is made, the horse and chaise must inevitably fall into bogs*; and in the *passages* through lands under the open-field culture, not only the roads are bad, but the difficulty of discerning public roads from mere drift-way†, or from passages to lands of different proprietors, is so great, that

* In riding from Risborough to Bledlow, I turned my chaise out of the road, to avoid a waggon, and my horse fell into a bog up to his chest. The same had nearly befallen me in a road adjoining to Biddlesden-park.

† In the road from Turweston to Biddlesden, I twice lost myself by such roads; the distance is not three miles, and yet although I left Turweston by eleven o'clock, I was unable to reach Biddlesden before three.

The difficulty in finding the way from Fenny Stratford to Whaddon was such, that without a guide I could not have surmounted it. From Winslow to Wing there was no less; and had it not been now and then for a colony of gypsies, I might have been obliged in more instances than one, to have taken refuge in a milking-house for a night's lodging. Gypsies are very commonly to be met with in the wild parts of Bucks. No doubt they resort thither on account of the badness of the roads, and the wild state of the country where the open fields abound, because, on

that without a guide, some of them cannot be travelled by a stranger with safety. Witness the roads from Fenny Stratford to Whaddon Chase, from Fenny Stratford to Drayton Parslow, and from thence by Stewkley to Wing; from Tring to Dunstable, from Risborough to Thame, from Hillesden to Whaddesdon; *all* the roads from Chesham; from Wendover to Chequers, and from thence to Missenden. In the north of the county, if they are any better, they are so circumambient, that their length more than counterbalances the badness of other roads. But indeed it is almost impossible to make an exception, for bad, very bad, are the best.

Even the turnpike-roads are not to be commended as such, except in certain parts; for by being traversed as they are by heavy waggons with wheels having conical rims, without much traffic by chaises or other carriages to cross and counteract the effect of such rims, and by being formed without gravel to fill up the interstices of the chalk, and unite with it, the same ruts are continually tracked, and so formed with inclinations to the middle of the road, that every shower of rain increases the bad effect of every preceding waggon. But the principal causes to which the badness of the roads are to be ascribed are two: first, the want of the residence of country gentlemen; and secondly, the number of dairy farms. No one requires proof, that the want of

these accounts they are out of the reach of the more enlightened part of the community; and being generally stationed upon spots near where two or more parishes meet, they are less liable to the attacks of parish-officers, because they are better able to escape them. Here, then, they can best accomplish their purposes, viz. impose upon the unenlightened, and live uncontrouled.

resident

resident gentlemen in a county, can be assigned as a cause of the badness of the roads; because every one knows, that none but such can or will insist upon the execution of the laws respecting roads. Indeed, they alone feel chiefly the ill consequence of neglect in this respect in such a county as this; for as this county consists so much of dairy farms, farmers and the occupiers of land have but little traffic of corn with teams, compared with corn counties: they will, moreover, befriend each other, by omitting to complain of the badness of roads, some from one cause, and others from another; some in hopes that they themselves shall be exempted from the strict duty required of them, if they forbear to require it of others; and others having no occasion themselves for more than a path for their horses to carry their butter periodically to the points agreed upon between them and their carriers. Thus the bye-roads are neglected, and the great roads ill used.

There is one great road across the county, which, although it has not the same causes to be assigned for its badness, and of course has not the same defects as those already alluded to, yet must not be passed over unnoticed: it is the road from Maidenhead to Colnbrook. What renders this road censurable is its form being very broad and very flat, so that in the winter months it is in some parts a perfect slough, and in the summer months extremely dusty. Such faults require only to be known to be corrected.

I have but one more observation to make, which seems to be of public utility respecting roads, and that is, the necessity of a turnpike-road to form a communication between the middle of the county and the north of it; a necessity which it is wonderful should have escaped the notice of the patrons of the Grand Junction

Canal, because it is so immediately connected with it. From Lindford-wharf, all the commodities which come by the Grand Junction Canal are distributed through the adjacent neighbourhood by land-carriage: this traffic (from the statement already given of the roads, it will not be questioned) renders the road from Newport to Stony Stratford, and others, at certain seasons, almost impassable. A turnpike-road from Newport by Linford, Stony Stratford and Whaddon, to Winslow, a distance of 18 miles, would facilitate this traffic, and be well supported by it, independent of the importance it would have in opening a communication between Aylesbury, on the south of the county, with the north; a convenience which would be felt by others as well as by the inhabitants of Bucks. Whether the observation now made will have any effect upon those interested in it, must be left to themselves to prove. It requires but little consideration to shew its utility, if adopted, and is so strikingly apparent to any one who considers the interest of the county in general as to commerce, and particularly as to its agriculture, that it would have been an impeachment of the assiduity of a Surveyor not to have noticed it.

Formerly, when all lands were in open-field culture, and when farms produced little else but subsistence for their own neighbourhoods; when a third at least of the land might remain uncultivated, and the remaining two-thirds yield only enough to maintain the scanty population around; when the means of getting from one parish to that adjoining, and returning back again in the course of a day, was all that was requisite, and when, if a journey to London was meditated by any one, it has been said he was first to make his will, take leave of his acquaintance, and then set out with as much

much anxiety as he would now undertake an East India voyage: at these times bad roads were congenial with the times, but at the present day, when farmers are enlightened, when their neighbours want but little of their assistance, and when necessity compels them to think of distant markets, and convenience enables them to do it; when population is increasing to such a degree that the means of subsistence imperiously require to be enlarged; and when markets are so established, and have such communication with one another, that one can within a day or two regulate those of the whole island; a Surveyor of Agriculture is astonished to find so many roads in the state described, and so little progress made in them towards bringing a county so rich as Bucks, upon an equality in Agriculture with the best regulated in the empire.

SECT. II.—CANALS.

THIS county has the advantage of the navigation of the Grand Junction Canal, which coming from the Oxford Canal at Braunston, enters Bucks near Cosgrave, from whence a branch goes to Buckingham, ten miles and a half: from Cosgrave the canal passes by Wolverton, Linford, Fenny Stratford, to Leighton, and leaves the county at Long Marston: from Bulborne another branch goes to Wendover, six miles and a half.

The freightage of barley to London is 2s. per quarter, and of other grain in proportion. The principal articles carried are iron, pottery, coals, timber, wine, all sorts of grocery, lime, and manures.

Parliament allowed in the year 1793, a sum to be raised not exceeding,	} £. 600,000 0 0
And by four subsequent Acts,	925,000 0 0
In all,	£. 1,520,000 0 0
But not more than 1,402,157 <i>l.</i> 10 <i>s.</i> has been raised,	} 1,402,157 10 0
And out of the revenue has been expended,	} 261,445 7 0
In all,	£. 1,663,602 17 0
The tonnage on the whole for the last year was,	} 92,602 16 6
And the annual charges for repairs amount to,	} 25,602 16 0
Remainder,	£. 67,602 0 6

This remainder is applied to pay interest, dividends, &c,

The sinking fund produced by an annual sum of 5000*l.* from the revenue, amounts to 62,939*l.* 5*s.* 2*d.*

	Miles.	Qrs.	Yds.
The length of this canal from Braunston, where it joins the Oxford Canal, to Brentford, is	93	0	276
From Bull's-bridge to Paddington,	13	1	220
From Cosgrave, by Stratford, to Buckingham, is	10	2	286
From Bulborne to Wendover, is	6	2	396
Besides these, there is a rail-road at Blisworth to Northampton,	4	4	14

The

The barges, which are 75 ft. long and 12 ft. wide, carry 60 tons, and are drawn by two horses.

The boats are 75 ft. long and 7 ft. broad, and carry 20 tons: these are drawn by one horse.

There are on this canal 108 locks, 240 brick bridges, and 60 wooden bridges, some of which swing, and others are raised. By the side of the canal is a towing path about five yards wide, having a fence of whitethorn.

SECT. III.—THE POOR.

THE state of the poor here presents nothing worthy of notoriety. In general, their number is said to be increasing: upon which I cannot but observe, it is much to be lamented, that amongst the many enclosures which have taken place, no new plan has been struck out, nor new means adopted, for maintaining and supporting them, upon principles calculated to increase their industry and assiduity. Where land is improved, and particularly by the plough, population increases: it might then have been expected, that in such cases, besides the hovels already existing, new cottages should have been raised by the public purse of a parish, upon a spot of ground, to which gardens might be allotted for the purpose of sowing potatoes and vegetables, and a small farm appropriated for the purpose of providing the inhabitants of such cottages with milk, butter, and wheat, at moderate prices, to be fixed, not by the caprice of the individual who is appointed to execute such a charge, but by the Quarter Session, or otherwise, so as to be binding. After such a provision for these necessary

necessary articles, there remains but one which perhaps has more effect upon the morals of the poor, and requires more consideration on the part of the public than any other article, I mean fuel. It is too true, that this is procured too often by thieving, and that farmers find themselves obliged to connive at it; and must not "a general connivance at theft" produce incalculable bad effects upon the morals of a people? The loss perhaps of wood is not a great injury to farmers, very likely none, because such wood is generally the property of the landlord; but connivance at theft abstractedly considered, must have very bad effects: when once the bulwarks of honesty are broken down, the ruin of morals must follow.

Women and children here make great earnings by making lace and platting straw, unfortunately to the disadvantage of agriculture; for whilst they can earn by such work from 7*s.* to 50*s.* per week, as Mr. Grace assured me was the case at Risborough, and Mr. Howard at Buckland, it can scarce be expected they would undertake work in the field at such a rate as the farmer could afford to pay.

The allotment of gardens by the side of the roads and upon waste spots of ground for labourers, is highly commendable, and generally to be seen throughout the county. Nothing tends more to the advantage of the poor and the public than this practice, because by such means the leisure hours of the poor may be employed, and they may gain a habit of estimating the value of property, which will inevitably tend to inculcate principles of honesty.

At Olney, farmers plough waste lands for the poor to plant potatoes; find half the seed, and take half the crop.

At

At Moulsoe, is a farm lett for the express purpose of finding the poor with milk at a moderate price. Observations upon such a practice extended to other necessities of life for the service of the poor, might produce materials for a system of management highly beneficial to the public.

At Halton, Sir John Dashwood King allows gardens to all his cottages, and used to offer premiums for the best cultivated, and to hold out other inducements to industry. Of late Sir John has turned his attention more towards the children of the poor, and held out inducements to them to find services as soon as possible, and to behave well in such services. Sir John has given clothing to every boy or girl when they first go out to service, or as apprentices, and if at the end of the first year's service they bring good characters, he allows every one two guineas. This serves as a great encouragement to good behaviour, and induces migration.

The Earl of Bridgewater's excellent management with respect to poor boys, is stated in Chap. XIV. Sect. 4.

Most of the towns have work-houses for the poor, conducted in the same manner as in other counties.

Box-Clubs—Are established every where. To the management of these, as to their rules and for their encouragement, it is highly becoming of neighbouring gentlemen and clergy to pay attention. No establishment can be of more general service as well to the individuals of the poor as to the public, both with regard to morals and with regard to expense. By the general laws of the country, a poor man knows, that when he has no money in his pocket his parish must maintain him and his

his family. If then by accident he gets into the kitchen of an alehouse with others of his acquaintance, the pleasures of company steal upon him, the fumes of liquor enliven him, and reflections upon the consequences which may ensue, are stifled by others, which only urge him on to increase and prolong the enjoyments of the present moment, by checking of which he sees no prospect of future temporal advantage according to the present system of management. It is evident what must be the consequence. Now,

Box-clubs tend to prevent this evil. By the very act of becoming a member of such clubs, a man becomes frugal, and in general he will be afraid to run the risk of spending too much money idly, lest he should bring illness upon himself, and thus be debarred the privilege of the club, by a rule which usually provides for such a case : and he has the farther encouragement to bring as little expense upon the club as possible, knowing that, what he leaves there will be distributed to his widow or children at his death. Such articles in the rules of these clubs are excellent. There are others equally good, which tend to influence the morals of the poor, such as *exclusion* in case a member is convicted of *theft*; and *deprivation* in case of illness *evidently* brought on by his own misconduct, as by *fighting, unlawful venery, &c.*

SECT. IV.—POPULATION,

Is every where increasing, according to the accounts given upon enquiry. As, however, a regular statement

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was delivered to Parliament in the year 1801, it seemed not to be necessary (because perhaps impossible) to get a more accurate statement upon the present occasion.

The following are stated as singular occurrences :

At Turweston, the population in 1801 was 200. For fifteen months in the years 1807 and 1808, not one person has died : at the beginning of these fifteen months the late curate died, 89 years old ; and at the end of the fifteen months a child was drowned.

At Thornton, from April 1803 to June 1807, not one funeral has taken place, and the number of inhabitants is 85.

The population taken in 1801 was 107,441 persons, of whom 52,094 were males, and 55,350 females : there were 20,443 inhabited houses, and 543 uninhabited.

Should not this increase of population induce an enlargement of the means of subsistence, by enclosing wastes and lands under open-field culture ?

CHAP. XVII.

OBSTACLES TO IMPROVEMENT.

THIS is a very important article, upon which, if there were not very glaring instances in this county which require animadversion, a Surveyor would rejoice to pass it over in silence. How then shall we proceed so as to state the truth without offence, and so as to leave the remedy apparent? Shall we state the obstacles, and then prove them to be so? or shall we do what is more congenial with good humour, state facts, and leave the obstacles to improvement to discover themselves? The former method wears the garb of compulsion; the latter that of freedom.

Let us first state a case under copyhold tenure, by which a Lord of a Manor is entitled to a fine not exceeding two years *improved** value of an estate, upon descent or alienation.

Suppose then that 50 acres of copyhold are not worth to lett, more than 5*s.* per acre, that is, 12*l.* 10*s.* per annum: but a person purchases it, and lets it to a tenant upon lease for fourteen years, upon condition that he lays out in the first three years 10*l.* per acre, so as to make the land worth 20*s.* per acre. Within four years the landlord dies, and his son has upon admission, to pay a fine to the Lord of 100*l.*, besides stew-

* See Blackstone's Commentaries, B. II. Chap. VI. Sect. 2.

ard's fees : the son dies within the same time four years, or it may be in less time ; his heir will have the same sum to pay the Lord : thus may 200*l.* and upwards have been paid to the Lord of the Manor on account of the improvement made in the estate, when the proprietors have received not more than 100*l.* And thus it may happen, if we continue the same suppositions to the end of the lease, that by improving 50 acres as above stated, the proprietors will have lost more than half the fee simple of the estate.

Now let us state a case under leaseholds upon lives, which are renewable or not at the will of the lessor, many of which are suffered to run out ; that is, the lessor refuses to renew at the death of any of the persons upon whose lives the lease was granted.

In Chap. IV. Sect. 6, p. 91, upon Leases, it appears that a farmer banked 40 acres, and that it required, as is afterwards shewn, a lease of 16 years and a half, for him to be repayed the expenses of such banking by the rent. If now these 40 acres had been leasehold upon lives, which, contrary to all expectation or calculation, fell within seven or eight years, or any time short of 16½ years ; in that case, the improvement would have been a real injury to the lessee, so far as rent is concerned, in the same manner as it was to the farmer to have an additional rent set upon him on account of his improvement.

With respect to improvement in general in modes of tillage, systems of cropping, banking, and draining, perhaps enough has been said in the Chapter upon Leases, and elsewhere, to point out the obstacles.

As to the questions, what should be the proportion of pasture to arable land, and upon what farms variations from the general rule should take place ? such discussion

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sion cannot be entered upon here; and yet until such questions are discussed and settled, precision cannot be had, as to what are to be deemed improvements in those cases.

The only cases remaining, are those of common or open-fields, and pasture land.

That much is required to be done as to the improvement of common fields, and that nothing can be done without enclosing them, will not be denied by any one who is acquainted with such fields. In Chap. II. Sect. 2, and throughout this Survey, accounts have been given of these lands; and but for the sake of following the plan prescribed by the Board, any farther notice of them might perhaps be omitted, particularly as the Board has drawn up so excellent and comprehensive a Report upon the subject; in the Appendix to which, No. VIII. it is stated, that more than 90,000 acres are thus circumstanced in Bucks. Let us form a conjecture of the injury which it may be reasonable to suppose is suffered by the 90,000 acres thus remaining in open-field culture. Of these, the general account given me has been, that one-third is sward and common, and that the remainder is cultivated under three courses, fallow, wheat, beans.

Now the parties interested are, the farmer, the landlord, the poor, the church, the lord of the manor, and the public.

The Farmer.—Under the article *Enclosing*, Chap. VI. it is stated, that rents have been more than doubled in cases of enclosure. Is it possible that this should be the case, and yet the profits to the farmer not increase in proportion? The fact is, that the outgoing expenses in cases of open-fields, are much greater in proportion than

than in cases of enclosure. Farmers, therefore, must be benefited by enclosure.

The Landlord—receives at present 10*s.* per acre. Hence 90,000 acres produce 45,000*l.* in rent. Enclose, and lett one-fifth of the arable, and one-seventh of the pasture go to the church (see the cases stated Chap. IV. Sect. 4), then there will remain only 73,714 acres, probably to be worth, after enclosing, considerably more than 73,714*l.* Landlords then receive immediately an advance of 28,714*l.* and a probability of increase in a very few years, as will be seen by examining what increase has hitherto taken place in such cases.

The Poor—and persons with little capital (such as butchers*, common shepherds, &c.), derive benefit from open-fields and commons, by being enabled to keep horses, cows, and sheep; and unless in cases of enclosures, provision can be made to ensure to the poor the means† of employing their leisure hours to advantage; of procuring at moderate prices the necessities‡ of life, fuel, and occupations; and unless allotments be set out in regular gradation from small to large, so that those who are poorest may be rendered comfortable, and those who feel themselves in a situation a little above the level of the poor, can by industry and good management find the means of support independent of the larger proprietors; it will be difficult to prove that, in any case, the poor have been benefited. No instances of benefit on this score have been stated to me. On the contrary,

* See the article *Sheep's Dung*, in Chap. XII. Sect. 3.

† See the article *Bow Clubs*, Chap. XVI. Sect. 3.

‡ See the article *Poor*, Chap. XVI. Sect. 3.

an increase of poor has been the general complaint, particularly at Hanslope; and in some places great caution is used by farmers, to hire servants in such a manner as to prevent them from gaining settlements in their parishes.

The Church—in all cases has been benefited by enclosures. What the income arising to the church from the 90,000 acres in open-field is at present, can only be conjectured. It is probable, that considering the modus which sometimes is attached to yard-lands, this income does not exceed 3*s.* 6*d.* per acre upon 60,000 arable, and 1*s.* 6*d.* upon 30,000 sward land; that is, 12,750*l.* upon the whole 90,000 acres. Now, by the commutations which have hitherto taken place of land in lieu of tithe, we cannot estimate the tithe commuted for at less than 5*s.* per acre upon the whole extent of land, that is, of 22,500*l.* as tithe for 90,000 acres. The church then loses by the open-fields remaining in their present state, at least 9750*l.* per ann.

The Lord of the Manor—loses, as often as fines become due, all the difference between rents 10*s.* per acre, and improved rents from 20*s.* to 35*s.* per acre. Indeed nothing but blindness to his own interest, can prevent a lord of a manor from enclosing wherever he has property, whether it consists of copyhold tenures or leasehold upon lives.

Without notes to ascertain the proportion of the copyhold to the freehold in the 90,000 acres under consideration, the loss can only in general terms be stated to be very great by not enclosing. A gentleman well conversant with the nature of these open-fields writes thus :
 “ With respect to the lord of the manor, it appears to me,

me, that besides the advantages common to other proprietors (amongst which ought to be considered the probably smaller expense of enclosing soon than remotely), there is one at least peculiar to himself. For instance; supposing a copyhold yard-land* (now worth 15*l.* a year) to treble its value in 20 years, if enclosed immediately, and to fall† in at the end of that period, let us see how the account would stand; as it respects the lord's interest.

“ A Yard-land enclosed immediately.

Annual value in 20 years trebled,	£.45	0	0
Deduct land-tax,	“	1	10 0
		<hr/>	
		43	10 0
Value at 27 years' purchase,	1174	10	0
		<hr/>	

“ A Yard-land unenclosed.

Annual value in 20 years, increased } from 15 <i>l.</i> to 21 <i>l.</i>	} £.21	0	0
Deduct land-tax,		1	10 0
		<hr/>	
		£.19	10 0
Value at 27 years' purchase,	526	10	0.
		<hr/>	
Value by enclosing,	£.1174	10	0
Ditto by not enclosing,	526	10	0
		<hr/>	
Loss by not enclosing,	£.648	0	0
		<hr/>	

“ Thus we see the land reverting to the lord, of more

* The yard-land in the instance here alluded to, is 30 acres.

† The tenure is leasehold upon lives; and it is supposed that the lord does not renew the lease.

than double the value in the one case than in the other, with no trouble or expense to him, except the parliamentary allowance to the copyholder or leaseholder for enclosing, charged on the land, and that open to modifications by the Act."

Upon the same subject, and alluding to the same open-fields, this writer further says: "It appears clearly to me, that on Mr. ——'s decision it depends, whether his land shall revert to him of 500*l.* or 1000*l.* value in every instance. And with respect to locality, or the future disposition of the land, nothing is more easy. The copyholds may be so allotted, that, although at present occupied in small detached parcels, they shall ultimately adjoin and correspond to an enlarged scale of occupation: for example, supposing one-fourth part freehold, let that lie together, and the copyhold by itself. Thus, whenever it fall in, it will be contiguous, and therefore may be as conveniently laid out now for eventual as for immediate possession. In short, there seems no valid reason to be assigned for the Lord to refuse to enclose, unless it be for want of money, and that cannot be the case; if it is, the longer he waits the more land will fall in, and of course the more money will be wanted."

The *public* loss for want of enclosure in open-fields may be collected, partly from what has already been stated, and partly from the consideration of the greater supply to be expected at market by enclosure, and of the increase to the revenue from the regular growth of barley to be introduced by a well regulated system of cropping. No exact calculation of a sum of money can be made on this score; the best reference is to the increase which has taken place in other places, which will clearly shew that no obstacle to improvement will
ever

ever be derived from reflections regarding the benefit of the country, particularly when the state of the population and the political situation of the country, together with the increase to the revenue, arising from the regular return of malt to be produced by one-fourth or one-fifth of 60,000 acres, at 3*l*s. 8*d*. per quarter, be taken into the account.

If then so many of the parties concerned are interested in the enclosure of open-fields, it will not be denied, that the enclosure of such fields is an improvement highly to be desired. What then are the obstacles? One has been stated, and is there not another remaining full as important, which has not been noticed, viz. the expense? This applies more particularly to small proprietors, and, added to the circumstances mentioned under the article *Poor*, in this Chapter, renders the obstacles in some cases insurmountable. Attempts have twice been made within a few years to enclose Stewkley: it is far from being certain that the present attempt will succeed. Stewkley consists of about 104 yard-lands, containing thirty acres each, in the proportion of one-third of grass and two-thirds arable, and 1000 acres enclosed, chiefly grass, and about 300 waste. The property is divided chiefly into small farms, and lett for three years. The corn tithes are taken in kind, and the vicarial by composition at a low rate, viz. for cows 6*s*. each, and for hay at the rate of 40*s*. per ton. There is not in Bucks a more complete example of the open-field system, and its concomitant circumstances, than at Stewkley. Stewkley is a village of farmers and labourers, upon an eminence, surrounding one of the completest and best specimens of a Saxon church to be seen in this island, environed by three extended fields, the one *fallow*, the second

wheat, and the third *beans*, with roads very difficult for a stranger to distinguish, having no characteristic mark distinct from drift ways to the different properties in the field. As far as I could learn, I think I may fairly state, that the obstacles to the enclosing of Stewkley are the number of small occupiers and the great expense of enclosing.

Tithes—are obstacles to improvement.

In broad and unqualified language, tithes have been asserted to be obstacles to improvement. The right to tithes, to whomsoever they belong, is equally as good in law as any right which exists, and therefore no arguments against them can be allowed as valid upon this occasion, but such as shew that they have a tendency to impede or prevent improvement in a manner different from other rights. In the Chapter upon Leases, page 92, a case is stated, where a sum of money is expended to render land worth 40*s.* per acre as rent, which before was worth only 28*s.* Let us suppose in that case that tithes were included in both the rents, and that upon the rent of 28*s.*, 3*s.* were to be accounted as tithe, and in the rent of 40*s.*, 5*s.*; that is, that the improvement produced an increase of 2*s.* per acre for tithe, and upon the whole, as tithes never pay any thing towards improvement, the tenant must pay for tithes an increase of 25*l.* per annum. Let us, however, calculate what this increase ought to be, upon the principles laid down in the Chapter from whence this case is taken. By those principles it appears, that the additional rent to be paid to the landlord for the term of the lease, was 86*l.* 18*s.* 3*d.* But upon the supposition now made, and that the increase of rent, omitting the tithe, is 10*s.* per acre; the additional rent to the landlord is only 67*l.* 15*s.*

15s. 10d. calculated in the same manner as the 86l. 18s. 3d. Hence arises a difference of 19l. 2s. 5d. which is that rent which the tenant should pay for the improvement of the tithes, so as to be repayed out of them the sum which he expended upon their improvement. But the actual sum legally chargeable is the increase of 2s. per acre, that is in the whole 25l., the difference between which and 19l. 2s. 5d. viz. 5l. 17s. 7d. is the annual sum paid by the tenant on account of the capital expended in order to improve the value of the tithes: this is further chargeable with property-tax, and becomes six guineas, acting as a rate for eleven years upon the capital of the farmer, expended on account of improving his land.

If it be asked, how can such a rate be removed; I answer, in the same manner as it is between the landlord and tenant, by a lease beginning and ending with the lease between landlord and tenant, and made upon the same principles. If a farmer in such a case and under such circumstances, can have a lease of his tithes upon the same terms and under the same conditions as he has his farm, there can exist no obstacle to improvement on the score of tithes, because thus security is given to the farmer for his capital employed, and the proprietor of the tithes relinquishes his right to a rate upon that capital, in order that he may gain that part of the increased value of the tithes which arises from the improved fertility of the soil.

In Chap. VIII. Sect. 2, p. 237, a case occurred upon the estate of T. W. Coke, Esq. which, perhaps, may be quoted as an instance in which the right to tithes might operate as an obstacle to improvement: the case is, that by improving a pasture at a great expense, and reaping a crop scarce sufficient to pay that expense, a

charge perhaps of tithe is brought upon the land for ever. In such an instance, if such were the case, a landlord who perhaps reaps no advantage whatever from such industry on the part of his tenant, would be very cautious of allowing his tenant to subject the land to a right which brings trouble and inconvenience with it, which did not exist before; and which, when once admitted, may be unalienable: he himself being but little interested in the improvement, would listen with great caution to any advantages to be derived on the score of the public, his tenant, or the parson, if eventually a new right is to be superinduced upon his land, and charges incurred to detract from its value. This obstacle, and every other of the kind, arising from breaking a modus, can be corrected only by a power granted to the proprietors of the tithes and the land to enter into a compromise by lease, or otherwise, previous to the improvement intended. But these powers of granting leases can proceed only from an Act of the Legislature.

I cannot, however, dismiss this subject without a word or two. Before the occupier begins to improve his land in such a case as this, the proprietor of the tithes possesses only a right in reversion, as it were. His present right (a modus) is but small; surely then it would not be inconsistent with reason or practice, that a commission should be instituted at as small an expense as possible, formed by an appeal or petition to the Quarter Sessions, or to the Bishop of the diocese, to appoint such a commission, consisting of three indifferent competent persons, to fix a value upon the tithe previous to any operation on the part of the farmer, and to let that tithe to him for a fixed period (*ex. gr.* the term of the lease between the landlord and the

the farmer), with a power to the parties concerned to revert to the same mode of letting such tithe at the end of every succeeding period. In fixing this value or composition for tithe, the commission should be bound to set it according to their own estimation of the quality of the land, and to deduct that rate upon the capital to be expended, which has already been stated. This plan would introduce* no principle which has not already been recognized in the commutation of tithes which have taken place upon enclosures, unless it can be called a new principle, for the proprietor of tithes to forego his right to that part of the advance in the value of the tithes, which has been shewn to be a rate upon the capital farmer. If this is a new principle, it surely is such a one as will readily be acknowledged to be reasonable, if upon the whole it is to produce a benefit to the proprietor of the tithes; and if it relinquishes a right which was only contingent, and merely produces a loss of a part of what might or might not be acquired *in future*, in order to gain a *present* advantage,

* The principle of letting tithes, and lands given in exchange for tithes, is recognized in the instances of corn rents, and is by no means objectionable in theory. See Chap. IV. Sect. 4.

CHAP. XVIII.

AGRICULTURAL SOCIETIES.

THERE is no Agricultural Society in Bucks, nor is there a county where more benefit might accrue to the public from such an institution, because there is not one where Nature has provided richer materials for the purpose, in proportion to its size, nor which is better calculated for improvement. Such a Society would infuse a spirit of thinking amongst those who now pursued certain modes of business, merely because their fathers did so before them, without considering whether a change of circumstances and times may not necessarily induce changes in agricultural management.

There are three points which have been particularly noticed in this Survey, with no other view, and it is to be hoped with no other effect, but to promote investigation and discussion amongst those who are better able to judge whether error exists in these matters, and who are more interested in correcting it if it does. They are important: I mean, 1. the practice of hiring farms without leases; 2. the small proportion of arable land to pasture upon the dairy farms; and 3. the small proportion of pasture to arable in most of the arable farms upon the Chiltern Hills.

The evil arising from the want of leases has been *slightly* represented, but it is hoped *truly*. In this instance Agricultural Societies may be of great service to
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the public, because they bring together different ranks of people interested in the subject, whose conversation and communication with each other is of more avail than the most elaborate essays. Such conversation may be the means of inculcating sentiments amongst the parties concerned, which would do away the injurious notion, that the interests of the landlord and the tenant militate against each other, and would tend to render the connection between the parties more congenial with an Englishman's heart. And as upon this particular point much good would accrue from a Society expressly instituted for the purpose of promoting the agriculture of the county, so also in the other points mentioned it would have no less effect. Independent practical farmers would speak out upon such subjects, and truths of general utility would come to light; for I think it will hardly be denied, that there have been practices really good which have been neglected for want of communication. Indeed I need but refer to one practice mentioned in this Survey, and repeatedly alluded to, as a circumstance to elucidate this observation; I mean Salter's* method of improving boggy meadows and bad pastures. Had the Norfolk Agricultural Society no other boast† but that of disse-

* See Chap. VII. Sect. 10, and Chap. VIII. Sect. 2 and 3.

† The Norfolk Agricultural Society has to boast of the example of its President, T. W. Coke, Esq. of Holkham, in the forming of water-meadows, for he accepted a Medal from the Board of Agriculture for his exertions in this respect, at the very time when he refused the offer of a Peerage from his valued friend C. J. Fox, Esq.; and in his improvement of the breed of sheep, together with the anxious endeavours of every one of its members to promote the intentions of its institution, which are, the promotion of agriculture, the improvement of breeding stock, and the encouragement of industry.

minating Salter's practice, in this respect, it has enough. Those who have followed the practice, will give the Society the praise due. Repeatedly has it been said, "this is no new plan:" as often as such an assertion is made, does the Norfolk Society receive homage, because, if ever the practice was adopted by any individual, with such individual it died, and it was reserved for Salter, and the Norfolk Society, to give it system, publicity, and notoriety. Upon the other points stated, communication and discussion are highly necessary. That there are instances of pasture farms, where the stock kept is so few, that half the land might be brought under the plough, and yet the same stock maintained, with the advantage of an increase of rent to landlords, large profits to farmers, and all the corn to the public, appears to me to be beyond a doubt. And further, that a different mode of cropping upon the Chiltern Hills, and keeping land under grasses for a longer time than in general farmers are willing to do at present, in order to enable them to keep more stock; and that this system would produce more profit to the farmer, exhaust land less, and yet produce nearly as much, and in some cases more corn, is a point too important to be overlooked. These subjects require the discussion of good practical farmers. In agricultural meetings, such topics would become matter of conversation, and might be made subjects of experiment, and the more they are discussed, the sooner would advantageous new practices be adopted, and the longer will old ones, which are good, be persisted in.

Upon the subject of stock much would be done. Bucks at present grazes beasts in summer, and has some graziers of as much experience and judgment as are to be found in this island. Their merit is well known.

To

To what extent winter-grazing ought to be carried upon pasture farms, and how much it may be increased upon arable farms, are questions which would soon be decided; and such competition would be instituted, as would tend to do away bad practices, and introduce such as are beneficial.

For the encouragement of industry in the poor, Agricultural Societies might have the best of effects, particularly here, where in most parts the platting of straw, and the making of lace, engross the whole of the time of the women. Rewards to such as are employed in agriculture, to dairy-maids, and to poor men, upon different points of merit, would render an Agricultural Society of inestimable worth. To these might be added many miscellaneous topics: *ex. gr.* upon turning my eyes to the proceedings of the Norfolk Agricultural Society, I find a premium given to a tenant of Sir W. Clayton, for under-draining $57\frac{1}{2}$ acres of heavy land, by cutting 3248 rods (of seven yards to a rod) of under-drains; some of which were 40 inches, some 36 inches, and some 30 inches deep. Such an example as this could not fail to produce very beneficial and very extensive effects in this county upon the heavy lands, where one is distressed to see the extreme injury produced, for want of drainage of every kind. Mr. Dodd's water-meadow (see Chap. XII. Sect. 4), would by such means obtain notoriety; and the beneficial effects of such practice would not fail to gain followers upon many of the meadows lying so conveniently to be watered, and being, from their vicinity to London, so capable of making the greatest advantage.

These are some of the benefits to be expected from the establishment of an Agricultural Society. There are many more than I can enumerate, or even surmise, which must

must be left to the better judgment of those who are more conversant with them, by their practice and residence in Bucks. They will forgive me for thus attempting to execute the charge reposed in me by the Board of Agriculture; and be assured, that I have no other view, but a hearty wish for their success in every point which concerns their agriculture.

APPENDIX.

The following Appendix comprises tables delivered to the Board of Agriculture by Mr. R. Parkinson, author of the *Experienced Farmer* :

No. I.—An Account of the Extent of the County, as delivered to Mr. Parkinson, upon enquiry and upon conjecture.

No. II.—The Names of the Proprietors of Estates.

No. III.—The Number of Farm-houses and Cottages.

No. IV.—The Size of Farms.

No. V.—An Account of Parishes tithable, and not.

No. VI.—Poor-rates in 1806.

No. VII.—An Account of the Profit of an Acre of Land for six years, upon the Rotation of fallow, wheat, beans.

No. VIII.—An Account of the Profit of an Acre of Land of the same quality for the same time, upon an improved system.

No. IX.—A Statement of Crops, Dr. and Cr. upon 50 Acres of the same quality as the last, upon a new system, convenient, as it is presumed, for Bucks.

No. X.—Effects of Enclosing.

No. XI.—An Account of the Seed sown per Acre, and the Produce of the Crops cultivated.

APPENDIX.

No. I.

EXTENT OF THE COUNTY.

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Glebe.	Waste.	Woods.	Water.	Total Number of Acres.
Addington,	439	908	60	—	100	—	—	—	1507
Adstock,	250	500	350	—	—	—	—	—	1100
Akeley,	300	600	350	—	—	—	—	—	1250
Aldbury,	200	100	900	—	—	—	—	—	1200
Amersham,	383	772	3200	—	—	—	36	36	4427
Ashendon, with Pol- licot,	560	1187	500	—	—	—	—	—	2247
Ashton Sanford,	100	188	397	—	—	—	—	—	685
Aston Abbots,	333	667	500	—	—	—	—	—	1500
Aston Clinton, with St. Leonard's, ..	266	534	1500	—	—	—	200	—	2500
Astwood, ..	205	410	360	—	—	—	10	—	985
Aylesbury, with Wal- ton,	290	500	870	—	—	—	—	—	1740
Barton, with Chit- wood,	141	384	175	—	—	—	20	—	720
Beaconsfield,	157	314	944	—	—	—	—	—	1415
Bechampton,	430	860	100	—	—	—	30	—	1420
Biddlesden,	340	694	760	—	—	—	—	—	1800
Bourton,	666	1334	1000	—	—	—	—	—	3000
Bledlow,	100	150	2150	—	—	—	600	—	3000
Bletchley, with Wa- ter Eaton,	100	200	800	—	—	—	—	—	1100
Boarstall,	644	1289	500	—	—	—	100	—	2533
Bradenham,	12	8	474	—	—	12	300	—	706
Bradwell,	116	234	550	—	—	—	—	—	900
Brayfield, Cold,	166	334	200	—	—	—	—	—	700
Brickhill, Great,	133	367	1500	—	—	—	—	—	2000
Brickhill, Little,	60	134	400	—	—	—	—	—	600
Brickhill, Bow,	152	406	700	250	—	—	80	—	1528
Brill, with Little London,	566	1134	300	—	—	—	100	—	2100
Broughton,	201	402	218	—	—	—	—	—	821

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Glebe.	Waste.	Woods.	Water.	Total Number of Acres.
Buckingham with the borough of Bourton, &c.	1000	2000	1000	—	—	—	—	—	4000
Buckland,	120	106	700	—	—	—	—	—	926
Burnham,	566	1134	2000	—	—	200	700	—	4600
Calverton,	133	267	1000	—	—	—	—	—	1400
Castlethorpe,	133	367	600	—	—	—	40	—	1140
Chalfont St. Giles, ..	203	607	1790	—	—	—	300	—	3000
Chalfont St. Peter's, ..	270	554	1960	—	—	60	150	—	3000
Chedington,	50	50	1100	—	—	—	—	—	1200
Clersley,	130	130	700	—	—	—	—	—	960
Chesham Bois,	50	36	634	—	—	15	164	—	899
Chesham,	233	467	2300	—	—	200	300	—	10,500
Cheynies,	125	125	1350	—	—	20	250	—	1879
Chickley,	666	1334	1000	—	—	—	50	—	3050
Chilton,	333	1167	200	—	—	—	—	—	2000
Chilton with Esington, ..	373	747	700	—	—	—	—	—	1820
Claydon, East,	667	1335	250	—	—	—	—	—	2252
Claydon, Middle, ..	493	987	200	—	—	—	320	—	2000
Claydon, Steple,	722	1445	750	—	—	—	77	—	3000
Clifton,	150	400	350	—	—	—	40	—	940
Crawley, North,	313	637	1000	—	—	—	50	—	2000
Crendon, Long,	233	467	2300	—	—	—	—	—	3000
Cubbington,	133	367	500	—	—	—	—	—	1000
Cuddington,	133	367	500	—	—	—	—	—	1000
Dagnal,	25	25	550	—	—	—	—	—	600
Datchet,	100	100	800	—	—	—	—	—	1000
Denham,	166	334	2150	—	—	—	350	—	3000
Dorney,	100	100	600	—	—	—	2	—	802
Dorton,	455	905	45	—	—	—	—	—	1405
Drayton,	100	160	540	—	—	—	—	—	800
Drayton Paray, or Parslow,	171	344	1300	—	—	—	—	—	1815
Dunton,	333	667	200	—	—	—	—	—	1200
Dynton, with Upton, & Morton, Aston, Waldrige, and Ford,	580	1162	1500	—	—	—	—	—	3242
Eddlesborough,	150	150	900	—	—	—	—	—	1200
Edgcot,	233	467	300	—	—	—	—	—	1000
Ellensborough,	383	767	2000	—	—	150	300	—	3600
Emberton,	263	527	900	—	—	—	60	—	1750
Eton,	100	100	500	100	—	—	—	—	800
Farnham, with Salt-hill, Hedgerley, Deant, and Sear-green,	188	452	1160	—	—	—	50	—	1850

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Clebe.	Waste.	Woods.	Water.	Total Number of Acres.
Fawley,	100	1150	1000	—	—	—	250	—	2500
Fingest,	10	10	680	100	—	—	400	—	1200
Fascott,	165	332	200	—	—	—	40	—	737
Fulmer,	150	300	750	200	—	—	—	—	1400
Gaddesden, Little, ..	206	414	310	—	—	—	—	—	930
Gayhurst, with Gore- fields,	203	411	100	—	—	—	100	—	814
Gibbon, Marsh,	333	667	1000	—	—	—	—	—	2000
Granboro',	233	567	400	—	—	—	—	—	1200
Grendon Under- wood, with Great Moor,	290	580	430	—	—	—	50	—	1350
Grove,	106	214	80	—	—	—	—	—	400
Haddenham,	250	250	2500	—	—	—	—	—	3000
Halton,	159	305	1000	74	—	9	349	—	1839
Hambleton,	250	250	5500	—	—	—	2000	—	8000
Hampden, Great, ..	60	60	480	—	—	—	300	—	900
Hampden, Little, ..	6	—	254	—	—	—	160	—	420
Hanslope,	1053	2207	2458	—	—	360	60	—	6138
Harnead,	233	567	350	—	—	—	3	—	1203
Hardwick,	233	567	400	—	—	—	—	—	1200
Hardwick, with Weedon	233	367	1200	—	—	—	—	—	1800
Hartwell,	140	280	160	—	—	—	20	—	600
Harwood, Great,	83	167	1200	—	—	—	150	—	1600
Harwood, Little,	200	400	300	—	—	—	—	—	900
Haversham,	233	567	800	—	—	—	—	—	1600
Hedgerley,	10	10	503	—	—	5	40	—	570
Hedsor,	50	90	260	—	—	—	150	—	550
Hillesden, with Cowley,	900	1500	100	—	—	—	—	—	2500
Hitcham,	40	60	1233	—	—	—	80	—	1413
Hitchingdon,	133	267	3000	—	—	—	—	—	3400
Hogston,	330	990	180	—	—	—	—	—	1500
Horsingdon,	40	60	200	—	—	—	—	—	300
Horton,	116	234	1000	—	—	—	—	—	1350
Hulcot,	200	400	100	—	—	—	—	—	700
Ickford,	200	400	400	—	—	—	—	—	1000
Imer,	100	200	200	—	—	—	—	—	500
Iver,	756	1513	1000	—	101	150	—	—	6590
Ivinghoe,	100	200	1700	—	—	—	—	—	2600
Kinble Magna,	466	934	1000	—	—	—	100	—	2500
Kinble Parva,	66	134	300	180	—	—	20	—	700
Kingsey,	200	400	600	—	—	—	—	—	1200
Kreslow,	120	620	60	—	—	—	—	—	800
Langley,	150	150	1700	—	60	150	—	—	2210
Lathbury,	200	650	450	—	—	—	—	—	1300
Leckhamstead,	733	1467	400	—	—	—	130	—	2730
Lee,	40	40	300	—	30	6	—	—	416

BUCKS.]

B b

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Glebe.	Waste.	Woods.	Water.	Total Number of Acres.
Lillingstone, with } Dayrell, }	613	1237	150	—	—	—	—	—	2000
Linford, Great,	466	934	600	—	—	—	—	—	2000
Linford, Little,	126	254	170	—	—	—	100	—	650
Linslade,	486	974	500	—	—	40	—	—	2000
Loughton,	202	404	606	—	—	—	—	—	1212
Ludgershall, with } Kingswood, }	666	1334	500	—	—	—	—	—	2500
Marlow, Great,	222	444	4034	—	—	—	400	—	6000
Marlow, Little,	66	134	2800	—	—	—	1200	—	4200
Marston, Fleet,	133	567	100	—	—	—	—	—	800
Marston, North,	409	1100	100	—	—	—	—	—	1600
Mearsworth,	50	70	560	—	—	—	—	—	680
Medmenham,	160	100	1300	—	—	—	1000	—	3000
Mentmore, with Ly- } burn,	333	667	500	—	—	—	—	—	1500
Missenden, Great, ..	450	750	3000	—	—	—	—	—	4200
Missenden, Little, ..	50	50	1410	—	—	—	120	—	1630
Milton,	484	968	350	—	—	—	—	—	1802
Morton, Maids,	100	200	1200	—	—	—	—	—	1500
Moulsoe,	152	305	914	—	—	—	—	—	1371
Mursley, with Salden,	146	294	500	—	—	—	60	—	1000
Nash, with Whaddon,	77	156	667	—	—	—	79	—	979
Newport Pagnel, with } Caldicot,	233	467	900	—	—	—	—	—	1600
Newton Blossomville,	66	134	480	—	—	—	—	—	680
Newton Longville, ..	66	134	1480	—	—	—	—	—	1680
Northall, a hamlet } to Edlesborough, }	160	324	500	—	—	—	—	—	1000
Oakley,	600	1200	200	—	—	—	—	—	2000
Olney,	135	267	1100	—	—	—	—	—	1500
Owing,	200	400	200	—	—	—	—	—	800
Padbury,	160	324	1100	—	—	—	—	—	1600
Penn,	70	80	1434	—	—	—	2500	—	4084
Pitchcott,	160	324	100	—	—	—	—	—	600
Pittlethorn,	300	600	1100	—	—	—	—	—	2000
Preston, with Cowley,	350	700	150	—	—	—	—	—	1200
Quainton, with Dod- } dershall, Shipton, } Lee, and Denham, }	1343	3077	1220	—	—	—	—	—	5700
Quarrendon,	397	1096	7	—	—	—	—	—	1500
Radnage,	70	136	700	—	—	—	—	—	900
Ratley, with Chack- } more,	133	267	600	—	—	—	—	—	1000
Ravenstone,	221	443	1200	—	—	—	207	—	2071
Risborough, Princes,	166	334	2000	—	—	—	—	—	2500

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Glebe.	Waste.	Woods.	Water.	Total Number of Acres.
Rishborough, Monks,	66	131	1200	—	—	—	100	—	1500
Saunderton,	40	60	750	—	—	—	—	—	850
Shabbington,	226	454	100	—	—	—	20	—	800
Shalstone,	183	367	550	—	—	—	50	—	1150
Shenley, ..	566	1134	600	—	—	80	200	—	2580
Sherrington,	264	524	800	—	—	—	14	—	1600
Slapton, with Horton,	83	167	750	—	—	—	—	—	1000
Snelson, with Lavenden,	260	534	1200	—	—	—	300	—	2300
Soulbury, hamlets } Hollington, and } Bruggenham, .. }	833	1667	1000	—	—	—	—	—	3500
Stewkley,	333	667	2000	—	—	—	—	—	3000
Stoke,	100	100	1300	—	—	450	250	—	2200
Stoke Goldington, } with Barkley-lane, }	81	163	1000	—	—	—	—	—	1244
Stoke Hammond,	166	334	1000	—	—	—	—	—	1500
Stoke Maudeville, ..	110	220	700	—	—	—	20	—	1050
Stone, with Bishop- } stone,	90	180	580	—	—	—	—	—	850
Stowe,	250	2625	350	—	—	—	—	—	3225
Stratford, Fenny,	50	50	400	—	—	—	—	—	500
Stratford, Stony,	—	—	—	—	—	—	—	—	40
Stratford, Water,	150	300	450	—	—	—	100	—	1000
Swanbourn,	600	1200	500	—	—	—	—	—	2300
Sympton,	165	330	525	—	—	—	30	—	1050
Taplow,	40	30	530	—	—	—	—	—	600
Tattenhoe, ..	240	480	50	—	—	—	88	—	860
Thornborough,	400	800	1200	—	—	—	—	—	2400
Thornton,	390	794	140	—	—	—	—	—	1330
Tingewick,	160	305	465	—	—	—	—	—	930
Towersey,	66	134	700	—	—	—	—	—	900
Turfield,	30	30	1040	—	—	12	300	—	1412
Turville, Weston, ..	166	334	1300	—	—	—	—	—	1800
Turweston,	216	434	850	—	—	—	—	—	1500
Twyford, with Poun- } don & Charndon, }	800	1600	420	—	—	—	180	—	3000
Tyringham, with Fil- } grave,	500	1000	300	—	—	—	—	—	1800
Underwood, Weston,	418	838	600	—	—	—	—	—	1856
Upton cum Chalvey, ..	73	147	1400	107	—	—	100	—	1827
Waddesdon, hamlets } Westcot, Granwell, } Woods, Ham, and } Coneyhill,	1333	2667	2000	—	—	—	250	—	6250
Walton,	206	414	80	—	—	—	—	—	700
Wavendon,	466	934	600	—	—	—	—	—	2000

Parishes.	Meadow.	Pasture.	Arable.	Commons.	Glebe.	Waste.	Woods.	Water.	Total Number of Acres.
Wendover,	100	200	1700	—	—	—	—	—	2000
Westbury,	200	400	900	—	—	—	200	—	1700
Wexham,	20	40	340	50	—	12	50	—	512
Whaddon,	273	547	80	—	—	—	—	—	900
Whitchurch,	400	800	800	—	—	—	—	—	2000
Winchendon, Lower,	433	867	700	—	—	—	—	—	2000
Winchendon, Under,	183	367	900	—	—	—	—	—	850
Willen,	163	327	110	—	—	—	—	—	600
Wing,	833	1667	2500	—	—	5	—	—	5005
Wingrave,	450	900	650	—	—	—	—	—	2000
Winslow, with Shipton,	719	1459	300	—	—	—	—	—	2478
Woburn,	111	222	2667	—	—	—	100	—	3100
Woolston, Great, . . .	78	157	300	—	—	—	—	—	535
Woolston, Little, . . .	102	205	200	—	—	—	—	—	507
Woolverton,	500	1000	700	—	—	—	—	—	2200
Wormenhall,	200	400	600	—	—	—	40	—	1240
Wooton,	526	1054	120	—	—	—	100	—	1800
Wroughton,	143	287	700	—	—	—	—	—	1150
Wraysbury,	133	267	850	—	—	—	—	—	1250
Wycombe, High, . . .	522	2612	866	—	—	—	200	—	4200
Wycombe, West, . . .	300	400	3300	—	—	—	1000	—	5000
Total number of } acres, }	54,819	114,601	184,432	1061	100	1821	18,594	36	75,504

No. II.

PROPRIETORS OF ESTATES.

-
- Anthonie, Sir Wil- } Marlow, Little, and Medmenham.
 liam Lee, Bart. }
 Adams, —, Wing.
 Anscombe, —, Woolston.
 Ambler, —, Boarstall,
 Aubrey, Sir John, .. Dorton, Chilton, Boarstall, and Brill.
 Ayton, —, Missenden.
 Bedford, Duke of, .. Chesham Bois, Cheynies, Bow Brickhill,
 and Wavendon.
 Buckingham, Mar- } Has estates in all parts of the county,
 quis of, } and besides his seat at Stowe, he has
 property at the following places: Ake-
 ley, Aylesbury, Biddiesden, Brough-
 ton, Fascott, Hanswick, Hulcot, Lud-
 gershall, with Kingswood, Oakley,
 Stoke Mandeville, Tingewick, Win-
 chendon Lower, Westbury, and
 Wooton.
 Bridgewater, Earl of, Edlesborough, Ivinghoe, Fulmer, and
 Pittlesthorn.
 Buccleugh, Duke of, Datchet.
 Baring, Sir Francis, Lillingstone, with Dayrell.
 Baily, —, Shenley.
 Baker, Mr. Hulcot.
 Baly, John, Esq. .. Bradwell.
 Barker, Mr. Meansworth.

Barker, John, Esq.	Cisstone, Sandford.
Barnes, Mr.	Stoke Hammond.
Barnett, —,	Kimble.
Batham, Thomas,	Brickhill.
Beauclerck, Hon. } and Rev. —, .. }	Leckhamstead.
Bennett, Rev. Mr. ..	Fascott.
Bernard, Serope, Esq.	Kimble Magna, and Winchendon Lower.
Bellington, Mr.	Wroughton.
Booles, Charles, ..	Barton, with Chitwood.
Bowden, Genu,	Towersey.
Bowling, Mr.	Woburn.
Box, Peter, Esq. ..	Broughton.
Bowler, Thomas, ..	Bletchley.
Rowyer, Sir George,	Denham.
Braddock, Mr.	Bledlin.
Buller, John,	Chesham.
Bullock, John,	Akeley.
Bullock, Joseph, ..	Edgcot.
Bunt, Mr.	Padbury.
Burrows, —,	Beaconsfield.
Burte, Mr.	Beaconsfield.
Busby's Trustees, ..	Willen.
Butler's Trustees, ..	Jeford.
Bynham, —,	Jeford.
Chesterfield, Earl of,	Buckland, Drayton Parslow, Edles- borough Grove, Ilmer, Stone, with Bishopstone, Waddesdon, with West- cot, Wing, and Wingrave.
Camden, Earl,	Hampden, Great.
Clifford, Lord,	Kreslow.
Carrington, Lord, ..	Aylesbury, Bledlow, Hartwell, Moul- soe, Radnage, Stone, with Bishop- stone, Waddesdon, with Westcott, Wendover, Wycombe, High. Conyngham,

Conyngham, Countess of,	} Buckland and Hitchingdon.
Curzon, Lord,	Missenden, Little, and Penn.
Clayton, Sir William,	Marlow, Great.
Calvert, Richard, ..	Fulmer.
Campbell, —,	Fulmer.
Causton, Rev. Mr. ..	Turweston.
Charleswood, Rev. —,	Weston Underwood.
Chester, Charles, ..	Chickley and Snelson, with Lavenden.
Clows, —,	Iver.
Coke, Thomas William, Esq.	} Hillesden, with Cowley and Preston.
Coke, T.	Wingrave.
Cope, Sir Robert, ..	Fascott.
Corbat, —,	Linslade.
Cottrell, Sir Clement,	Chersley.
Courney, George, ..	Weston Underwood.
Cox, Mr.	Granborough and Wingrave.
Cricketer, Mr.	Wraysbury.
Crook, —,	Marsh Gibbon and Beaconsfield.
Cropp, Mr.	Langley.
Crown Lands,	Eton.
Company in London,	Weston Turville.
Dartmouth, Earl of,	Olney.
Dormer, Lord,	Monks Risborough.
Dayrell, R. Esq. ..	Lillingstone with Dayrell.
Dagnell, Mr.	Fulmer.
Darell, Mr.	Chesham.
Dearing, H. Esq. ..	Kimble Magna and Lee.
Derby, Booker, Esq.	Horton.
Delany, Mr.	Quainton.
De Salis, Dr.	Wing.
Dobson, Robt.	Claydon Steeple.
Douglas, A. Esq. ..	Broughton.
Drake, —, Esq.	Missenden, Great.

- Drake, T. D. T. Esq. Cimersham, and Missenden, Little.
 Dupré, James, Esq. Beaconsfield, Quarrendon, and Woburn.
 Durant, —, Tingewick.
 Eagle, Mr. North Marston and Wingrave.
 Eaton, Mr. Ivinghoe.
 Edgon, Mr. Chesham Bois.
 Edwards, George, } Weston Underwood.
 Esq. }
 Ellicott, Mr. Cubbington.
 Fermanagh, Lord, .. Claydon, East, Middle, and Steeple.
 Faine, J. Radnage.
 Farrer, Mr. Newton Blossomville, and Snelson, with Lavendon.
 Farthing, Barrett, .. Turweston.
 Fisher, Mr. Medenham.
 Ford, Randall, Wexham.
 Foster, —, Woolston, Little.
 Fournaine, Rev. C. } Stoke Hammond.
 Gardiner, }
 Fowler, Edward, .. Adstock.
 Franklin, Joseph, .. Bradenham.
 Freeman, S. Esq. .. Fawley.
 Fremantle, Captain, Swanbourn.
 Froget, William, Esq. Fulmer.
 Grenville, Lord, .. Burnham and Hitcham.
 Godolphin, Lord, .. Quainton and Weston Underwood.
 Gott, Sir H. Chalfont St. Giles.
 Godolphin, Sir F. .. Wexham.
 Gill, Mrs. Wraysbury.
 Gooderick, —, Braynton.
 Goodman, Mr. Woolston, Great.
 Goodwin, Mr. Wraysbury.
 Greathead, —, Sherrington and Padbury.

Green,

Green, Mr.	Cubbington.
Greenwood, Charles,	Drayton Parslow, and Mursley, with Salden.
Grindle, Robert,	Hampden, Little.
Grubb, John,	Horsendon and Princes Risborough.
Gurney, Mr.	Stoke Mandeville.
Hampden, Lord, ..	Hampden, Little, Kimble Magna, and Wendover.
Haden and Har- court, }	Aldbury.
Hanmer, Sir T.	Swanbourn.
Hanmer, E.	Fenny Stratford.
Hart, —,	Sherrington.
Harvey, Sir Robert,	Langley.
Hay, Dr.	Calverton.
Hayes, Mr.	Water Stratford.
Head, Mr.	Cubbington.
Hedger, —,	Brickhill, Bow.
Hedges, Mr.	Cubbington.
Heybourn, —,	Bledlow.
Herbert, Mr.	Kingley.
Hicks, John, Esq. ..	Bradenham.
Higgins, Thomas, ..	Clifton.
Hibbert, —,	Chalfont St. Giles.
Hill, Robert, Esq. ..	Ellesborough.
Hillyard, Nathaniel,	Bow Brickhill.
Hine, Rev. Mr.	Hampden.
Horn, Edward,	Warminghall.
Hospital, Christ, ..	Stoke Mandeville.
Hospital, St. Thomas,	Datchet.
Howard, Rev. F. ..	Hogston.
Howard, William, ..	Buckland.
Hugh, John,	Quainton.
Hutton, Rev. Mr. ..	Morton.
Hutton, J. L.	Morton.

Jercks,

Jercks, Rev. Mr. ..	Aldbury.
Jervis, G. S. P.	Grandon Underwood.
Irby, William H. ..	Farnham.
Jobson, —,	Bradenham.
Jincs, James,	Radnage.
King, Sir J. Dash- wood, Bart. }	Bradenham, Halton, and Wycombe.
King, Mr.	Cubbington.
King, William,	Drayton Parslow.
King, Mr.	Nash, with Whaddon.
Kitelee, Mr.	Castlethorpe.
Knapp, Rev. P.	Sheoley.
Lake, Lord,	Clinton.
Lane, —,	Barton, with Chitwood.
Langton, Mr.	Farnham.
Langton, Rev. Mr. ..	Little Harwood.
Lascelles, William,	Weston Underwood.
Lathbury, Dr.	Langley.
Lee, Rev. Sir George,	Hartwell and Stone, with Bishopstone.
Lefevre, Mr.	Kimble Magna.
Lincoln, —,	Castlethorpe.
Lord, Dr.	Drayton Parslow.
Longmire, Mr.	Winchendon, Lower.
Lovett, Sir Jonathan,	Liscombe and Soulbury.
Ludbury, Thomas, ..	Chalfont St. Giles.
Lucas, Mr. C. and Mr. J. }	Wingrave and Wroughton.
Marlborough, Duke of,	Long Crendon, Fleet Marston, Oakley, Shabbington, and Waddesdon, with Westcot.
Manners, Sir Robert,	Drayton and Dorton.
Mansell, Mr.	Langley.
Matthews, R.	Leekhamstead.
Meacher, —,	Ivinghoe.
Mead, Mr.	Cubbington.

Measures,

Measures, Rev. Mr.	Newton Longville.
Merewater, Mr.	Walton.
Miners, Company of,	Wingrave.
Mingay, Dr.	Datchet.
Moor, William,	Missenden, Little.
Morgan, Colonel, ..	Biddlesden.
Morris, Rev. Mr. ..	Cheynies.
Murrell, —,	Cuddington.
Norfolk, Duke of, ..	Stoke Hammond.
Napp, —,	Linford, Little.
Neale, Mr.	Stoke Hammond and North Marston.
Needham, General,	Datchet.
Newbury, Mr.	Taplow.
Newman, B.	Ratley, with Chackmore.
Normond, Mr.	Owing.
Northey, Colonel, ..	Olney.
Osbourn, —,	Wexham, Akeley, Harwood.
Oxford, New College,	Whaddon.
Oxford, Dr. Rat- chiff's Charity, }	Woolverton.
Oxford, All Soul's College,	Padbury.
Oxford, —,	Tingewick.
Oxford, Magdalen College,, }	Maidsmorton.
Portland, Duke of, ..	Hedgerley, Upton, with Chalvey and Weston Underwood.
Portsmouth, Lord, ..	Drayton Parslow.
Palliser, George,	Chalfont St. Giles.
Palmer, Sir Charles,	Deubam.
Parker, —,	Wingrave and Bow Brickhill.
Paulet, General,	Adstock and Claydon Steeple.
Parson, —,	Barton, with Chitwood.
Penn, Mr.	Eton and Stoke.

Penton,

- Penton, —, Princes Risborough.
 Pinfold, Captain, .. Swanbourn.
 Pinfold, Charles, .. Walton.
 Point, Rev. Mr. Newton Longville.
 Pollard, J. C. Leckhamstead.
 Praed, William, Emberton, Broughton, Tyringham.

 Quarterley, Rev. Mr. Barton, with Chitwood.

 Reynolds, —, Long Crendon.
 Rickford, James and }
 Rose, } Kimble Magna.
 Riddell, Sir John, .. Newport Pagnel.
 Rose, Thomas, Winchendon, Lower.

 Salisbury, Marquis of, Beachampton, Calverton, and Stony
 Stratford.
 Spencer, Earl, Castlethorpe and Hanslope.
 Stanhope, Earl, Hogston.
 Saunders, Thomas, .. Pittlesthorn.
 Scott, Robert, Medenham and Hambledon.
 Seabrook, Mr. Wingrave.
 Sear, Mrs. Mary, .. Cheddington.
 Sears, Mr. Burnham.
 Selby, William, Winslow, Tattenhoe, and Whaddon.
 Shard, William, Hedgerley.
 Sheppard, Dr. Marsh Gibbon.
 Shelvington, Miss, .. Newton Blossomville.
 Shipton, James, Loughton and Bradwell.
 Small, Alexander, .. Clifton and Haversham.
 Smith, B. Wingrave.
 Smith, Drummond, Meansworth.
 Smith, C. Monks Risborough.
 Smith, Mr. Cublington and Little Woolston.
 Snell, Mr. Jeford.
 Snell, Mr. Brill.
 Stevens, Mr. Wingrave.

Stone,

Stone, Thomas,	Langley, North Crawley, and Long Crendon.
Stone, John,	Buckland.
Stiron, Mr.	Padbury.
Sympson, Mr.	Swanbourn.
Townshend, Mar- quis of,	} Olney.
Thomond, Marquis of	
Temple, Lord,	Brill and Tattenhoe.
Tatham, Dr.	Turweston.
Taylor, Mr.	Bletchley.
Tenant, Mr.	Brill.
Tomkins, Mr.	Weston Turville.
Towers and Sulli- man, Messrs. ..	} Iver.
Townshend, Joseph,	
Trevor, Dr.	Astwood.
Trevor, John,	Little Hampden.
Tubbs, John,	Horton.
Turner, Mr.	Bledlow and Saunderton.
Villiers, Villiers, ..	Mentmore.
Winchester, Mar- quis of,	} Dynton.
Winchilsea, Earl of,	
Wakefield, Captain,	Wendover.
Wakham, Mrs.	Farnham.
Walker, Mr.	Chilton.
Waller, Edmond, ..	Beaconsfield.
Ward, Mr.	Woburn.
Watts, William,	Hanslope.
Way, B.	Datchet.
Wells, Dr.	Little Missenden.
Westy, Major,	Olney.
Wey, Mr.	Hedgerley.
Whitchurch, Mr. ..	Chalfont St. Peter's.

Wilkinson,

Wilkinson, Mr.	Bradwell.
Willet, Mr.	Granborough.
Wills, Rev. Mr.	Preston with Cowley.
Williams, C.	Horton and Wraysbury
Williams, Mr.	Great Marlow.
Williams, Thomas, ..	Fingest.
Windsor, College of,	Long Crendon.
Windsor, Canons of,	Dorney.
Wise, Captain,	Stoke.
Withers, Mr.	Westbury.
Wright, Mr.	Stoke Goldington.
Wright, Miss,	Langley and Gayhurst.
Wroughton, Rev. Mr.	Fingest.
Whitchurch, Ryo, }	Stoke Mandeville.
& Welb, Messrs. }	
Wyckham, Mr. ... }	Turweston.
Wyckham, Miss, }	
Westminster Church,	Turweston.
Yates, John, }	Turweston.
Yates, Richard, .. }	
Young, Miss,	Langley.

No. III.

NUMBER OF FARM-HOUSES AND COTTAGES.

<i>Parishes.</i>	<i>Farm</i>	<i>No. of</i>	<i>Parishes.</i>	<i>Farm</i>	<i>No. of</i>
	<i>Houses.</i>	<i>Cottages.</i>		<i>Houses.</i>	<i>Cottages.</i>
Addington,	7	7	Brickhill, Bow,	7	60
Adstock,	12	20	Brill, with Little } ..	9	70
Akeley,	7	30	London, }		
Aldbury,	6	26	Broughton,	4	30
Amersham,	25	250	Buckingham,	20	100
Ashendon, with Pol- } ..	9	30	Buckland,	8	15
licot, }			Burnham,	17	157
Ashton Sanford,	3	6	Calverton,	8	26
Aston Abbots,	8	10	Castletorpe,	5	50
Aston Clinton, with } ..	16	40	Chalfont St. Giles, ..	20	60
St. Leonard's, .. }			Chalfont St. Peter's, ..	12	80
Astwood, ..	8	25	Cheddington,	12	12
Aylesbury, with Wal- } ..	10	500	Chersley,	6	30
ton, }			Chesham Bois,	4	5
Barton, with Chit- } ..	5	3	Chesham,	50	300
wood, }			Cheynies,	9	50
Beaconsfield,	10	0	Chickley,	12	14
Beachampton,	9	25	Chilton,	11	40
Biddlesden,	4	12	Chilton with Easington, ..	11	40
Bearton, with Brough- } ..	12	45	Claydon, East,	14	20
ton, }			Claydon, Middle, ..	7	1
Bledlow,	20	100	Claydon, Steeple,	14	67
Bletchley, with Wa- } ..	10	10	Clifton,	5	3
ter Eaton, }			Crawley, North,	30	35
Boarstall,	11	8	Crendon, Long,	25	100
Bradenham,	5	16	Cubbington,	6	10
Bradwell,	5	30	Cuddington,	13	0
Brayfield, Cold,	3	12	Dagnal,	12	30
Brickhill, Great,	12	9	Datchet,	5	70
Brickhill, Little,	7	5	Denham,	9	100

<i>Parishes.</i>	<i>Farm Houses.</i>	<i>No. of Cottages.</i>	<i>Parishes.</i>	<i>Farm Houses.</i>	<i>No. of Cottages.</i>
Dorney,	5	12	Hardwick,	6	20
Dorton,	5	12	Hardwick, with Wee-	14	6
Drayton,	6	13	don,		
Drayton Parslow, ..	9	32	Hartwell,	4	13
Dunton,	4	4	Harwood, Great,	14	30
Dynton, with Upton,	12	60	Harwood, Little,	9	4
Morton, Aston, }			Haversham,	4	30
Waldridge, and }			Hedgerley,	5	13
Ford,			Hedsor,	1	6
Edlesborough,	9	33	Hillesden, with Cowley,	16	18
Edgcot,	8	18	Hitcham,	5	15
Ellesborough,	30	40	Hitchingdon,	16	13
Emberton,	8	30	Hogston,	5	30
Eton,	6	150	Horsingdon,	2	3
Farnham, with Salt-	6	60	Horton, with Colnebrook,	9	90
hill, Hedgerley, }			Hukot,	5	8
Dean, and Sear- }			Ickford,	3	3
green,			Ilmer,	4	6
Fawley,	9	25	Iver,	20	80
Fingest,	9	30	Ivinghoe,	16	50
Fascott,	4	14	Kimble Magna,	12	25
Fulmer,	4	12	Kimble Parva,	4	20
Gaddesden, Little, ..	3	2	Kingsey,	6	12
Gayhurst, with Gore- }	3	9	Kreslow,	1	0
fields,			Langley,	7	50
Gibbon, Marsh,	25	50	Lathbury,	3	20
Granboro',	12	6	Leekhamstead,	13	30
Grandon Underwood, }	15	30	Lea,	3	20
with Great Moor, }			Lillingstone, with Day-	8	13
Grove,	4	1	rell,		
Halton,	4	19	Linford, Great,	10	40
Haddenham,	30	100	Linford, Little,	1	7
Hambledon,	17	70	Linslade,	10	20
Hampden, Great,	6	25	Loughton,	11	14
Hampden, Little, ..	3	9	Ludgershall, with }	12	8
Hanslope,	18	130	Kingswood, }		
Harmead,	3	0	Marlow, Great,	24	50

<i>Parishes.</i>	<i>Farm</i>	<i>No. of</i>	<i>Parishes.</i>	<i>Farm</i>	<i>No. of</i>
	<i>Houses.</i>	<i>Cottages.</i>		<i>Houses.</i>	<i>Cottages.</i>
Marlow, Little,	9	52	Saunderton,	5	12
Marston, Fleet,	3	3	Shabbington,	10	7
Marston, North,	8	15	Shalstone,	6	15
Mearsworth,	8	13	Shenley,	16	50
Medmenham,	8	40	Sherrington,	13	35
Mentmore, with Ly- } burn,	14	14	Slapton, with Horton, ..	8	8
Milton,	6	44	Snelson, with Laver- } den,	8	40
Missenden, Great, ..	0	0	Soulbury,	11	25
Missenden, Little, ..	10	100	Stewkley,	40	40
Morton, Maids,	9	50	Stoke,	9	100
Moulsoe,	5	46	Stoke Goldington, } with Barkley-lane, }	5	20
Mursley, with Salden, ..	12	10	Stoke Hammond,	7	30
Nash, with Whaddon, ..	10	48	Stoke Mandeville,	10	10
Newport Pagnel, } with Caldicot, }	12	500	Stone, with Bishopstone, ..	4	7
Newton Blossomville, ..	4	30	Stowe,	10	38
Newton Longville, ..	20	50	Stratford, Water, ..	5	10
Northall, hamlet to } Edlesborough, }	10	36	Stratford, Stony,	0	0
Oakley,	22	10	Stratford, Fenny,	4	4
Olney,	13	200	Swanbourn,	15	55
Owing,	8	3	Sympson,	8	14
Padbury,	7	137	Taplow,	5	20
Penn,	20	51	Tattenhoe,	3	2
Pitchcott,	2	5	Thornborough,	15	40
Pittlesthorn,	12	35	Thornton,	5	7
Preston, with Cowley, ..	7	35	Tingewick,	10	10
Quinton, with Dod- } dershall, Shipton }	8	40	Towersey,	9	30
Lee, and Denham, ..			Turfield,	8	51
Quarrendon,	5	4	Turville, Weston,	14	30
Radnage,	9	30	Turweston,	7	30
Ratley, with Chackmore, ..	2	5	Twyford, with Poun- } don and Charndon, }	20	61
Ravenstone,	12	51	Tyringham, with Fil- } grave,	6	12
Risborough, Princes, ..	24	200	Underwood, Weston, ..	10	35
Risborough, Monks, ..	10	29	Upton cum Chalvey, ..	8	200

BUCKS.]

C C

Waddes-

<i>Parish.</i>	<i>Farm Houses.</i>	<i>No. of Cottages.</i>	<i>Parish.</i>	<i>Farm Houses.</i>	<i>No. of Cottages.</i>
Waddesdon, hamlets			Wingrave,	12	20
Westcot, Cranwell, } 45	100		Winslow, with Shipton, 12	250	
Woods, Ham, and			Woburn,	14	96
Coneyhill,			Woolston, Great, ..	3	1
Walton,	8	0	Woolston, Little,	4	2
Wavendon,	8	59	Woolverton,	7	30
Wendover,	6	50	Wormenhall,	8	38
Westbury,	6	40	Wooton,	8	16
Wexham,	5	20	Wroughton,	8	38
Whaddon,	13	100	Wraysbury,	8	70
Whitchurch,	19	150	Wycombe, High,	29	116
Winchendon, Lower, 6	20		Wycombe, West,	24	57
Winchendon, Under, 6	24				
Willen,	2	15	Total, .	2039	8938
Wing,	6	30			

No. IV.

SIZE OF FARMS.

<i>Parishes.</i>	<i>Acres.</i>		<i>Parishes.</i>	<i>Acres.</i>
	<i>from</i>	<i>to</i>		<i>from</i> <i>to</i>
Addington,	69	300	Buckingham,	40 200
Adstock,	15	300	Buckland,	28 310
Akeley,	30	170	Burnham,	40 1000
Aldbury,	100	400	Caiverton,	50 400
Amersham,	30	300	Castlethorpe,	50 500
Ashendon, with Pol- } licot,	200	500	Chalfont St. Giles, ..	20 150
Ashton Sanford,	80	400	Chalfont St. Peter's, ..	50 250
Aston Abbots,	40	300	Cheddington,	45 200
Aston Clinton, with } St. Leonard's, .. }	30	200	Chersley,	80 250
Astwood, ..	80	180	Chesham Bois,	70 160
Aylesbury, with Wal- } ton,	60	300	Chesham,	20 260
Barton, with Chit- } wood,	38	180	Chenies,	30 272
Beaconsfield,	35	250	Chickley,	60 500
Beachampton,	28	200	Chilton,	100 450
Bearton, with Droughton, ..	60	200	Chilton, with Easington, ..	80 600
Biddlesden,	20	400	Claydon, East,	85 300
Bledlow,	50	200	Claydon, Middle, ..	35 300
Bletchley, with Wa- } ter Eaton, }	30	100	Claydon, Steeple,	100 570
Boarstall,	20	200	Clifton,	30 200
Bradenham,	27	212	Crawley, North,	20 312
Bradwell,	20	200	Crendon, Long,	20 400
Brayfield, Cold,	40	400	Cubbington,	30 240
Brickhill, Great,	50	200	Cuddington,	20 180
Brickhill, Little,	20	200	Dagnal,	20 150
Brickhill, Bow,	70	700	Datchet,	140 300
Brill, with Little } London,	20	200	Denham,	20 500
Broughton,	150	300	Dorney,	30 350
			Dorton,	71 355
			Drayton,	25 500
			Drayton Parslow, ..	14 150
			Dunton,	100 250
			Dynton, with its hamlets, ..	50 640
			Edlesborough,	20 200

<i>Parishes.</i>	<i>Acres.</i>		<i>Parishes.</i>	<i>Acres.</i>	
	<i>from</i>	<i>to</i>		<i>from</i>	<i>to</i>
Fedgeot,	40	230	Hulcot,	20	300
Ellesborough,	60	300	Ickford,	13	106
Emberton,	10	220	Ilmer,	40	200
Eton,	20	200	Iver,	20	400
Farnham, with its } hamlets, }	30	350	Ivinghoe,	50	500
Fawley,	40	800	Kimble Magna,	30	250
Fascott,	80	350	Kimble Parva,	20	200
Fingest,	20	280	Kingsey,	50	260
Fulmer,	90	250	Kreslow,	—	800
Gaddesden, Little, ..	25	260	Langley,	60	400
Gykhurst, with Gore- } fields, }	46	323	Lathbury,	300	506
Gibbon, Marsh,	20	120	Leekhamstead,	50	400
Granboro',	20	250	Lee,	60	200
Grandon Underwood, } with Great Moor, }	20	280	Lillingstone, with Dayrell,	70	200
Grove,	30	600	Linford, Great,	20	300
Haddenham,	60	300	Linford, Little,	100	420
Halton,	165	200	Linslade,	150	200
Hambledon,	30	300	Loughton,	60	300
Hampden, Great,	20	200	Ludgershall, with } Kingswood, }	10	150
Hampden, Little, ..	125	160	Marlow, Great,	60	400
Hanslope,	60	400	Marlow, Little,	60	600
Harmead,	100	450	Marston, Fleet,	70	360
Hardwick,	50	400	Marston, North,	40	200
Hardwick, with Weedon,	15	300	Mearsworth,	20	250
Hartwell,	20	200	Medmenham,	50	300
Harwood, Great,	20	200	Mentmore, with Ly- } burn, }	50	300
Harwood, Little,	20	200	Milton,	40	500
Haversham,	355	400	Missenden, Great, ..	50	300
Hedgerley,	10	200	Missenden, Little, ..	20	250
Hedsor,	220	230	Morton, Maids,	50	200
Hillesden, with Cowley,	80	430	Moulsoe,	14	119
Hitcham,	100	500	Mursley, with Salden,	15	100
Hitchingdon,	60	400	Nash, with Whaddon,	30	160
Hogston,	250	550	Newport Pagnel, with } Calticot, }	30	300
Horsingdon,	50	200	Newton Blossomville,	50	123
Horton,	60	220	Newton Longville, ..	20	360
			Northall,		

<i>Parishes.</i>	<i>Acres.</i>		<i>Parishes.</i>	<i>Acres.</i>	
	<i>from</i>	<i>to</i>		<i>from</i>	<i>to</i>
Northall,	20	150	Sympson,	40	200
Oakley,	10	250	Taplow,	100	190
Olney,	70	200	Tattenhoe,	100	343
Owing,	30	200	Thornborough,	50	500
Padbury,	15	280	Thornton,	120	300
Penn,	20	300	Tingewick,	60	250
Pitchcott,	60	300	Towersey,	40	200
Pittlesthorpe,	27	500	Turfield,	50	400
Preston, with Cowley,	40	240	Turville, Weston, ..	30	300
Quainton,	40	300	Turweston,	50	250
Quarrendon,	60	200	Twyford,	18½	360
Radnage,	50	230	Tydingham,	70	400
Ratley, with Chack- } more,	60	400	Underwood, Weston, ..	28	268
Ravenstone,	15	450	Upton cum Chalvey, ..	60	200
Risborough, Princes,	30	500	Waddesdon,	20	400
Risborough, Monks,	20	200	Walton,	80	350
Saunderton,	120	300	Wavendon,	40	500
Shabbington,	30	200	Wendover,	20	200
Shalstone,	80	300	Westbury,	70	450
Shenley,	18	300	Wexham,	40	200
Sherrington,	60	150	Whaddon,	50	200
Slapton, with Horton,	20	200	Whitchurch,	30	300
Snelson, with Lavenden,	20	400	Winchendon, Lower, ..	40	600
Soulbury,	100	250	Winchendon, Under, ..	100	200
Stewkley,	20	120	Willen,	100	250
Stoke,	50	250	Wing,	100	380
Stoke Goldington, } with Barkley-lane, }	48	265	Wingrave,	40	250
Stoke Hammond,	60	350	Winslow, with Shipton, ..	20	500
Stoke Mandeville, ..	20	600	Woburn,	60	300
Stone, with Bishop- } stone,	400	450	Woolston, Great, ..	120	200
Stowe,	162	47½	Woolston, Little, ..	140	232
Stratford, Water,	100	220	Woolverton,	50	400
Stratford, Stony,	—	—	Wormenhall,	65	300
Stratford, Fenny,	40	160	Wooton,	35	460
Swanbourn,	150	300	Wroughton,	30	275
			Wraysbury,	20	260
			Wycombe, High,	60	200
			Wycombe, West, ..	60	400

No. V.

TITHES.

Parishes that are Tithe free, or Tithable, are as follow.

Addington,	Tithe free.
Adstock,	Ditto ditto.
Akeley,	Tithe corn rent.
Aldbury,	Tithable.
Amersham,	Ditto.
Ashendon,	Tithe free.
Ashton Sanford,	Tithable.
Aston Abbots,	Tithe free.
Aston Clinton,	Tithable, except one farm modus, and meadows tithe free.
Astwood,	Part tithable and part tithe free.
Barton,	Tithe free.
Beaconsfield,	Tithable.
Beachampton,	Ditto.
Bearton,	Ditto ditto.
Biddlesden,	Tithe free.
Bledlow,	Tithable.
Bletchley,	Ditto.
Boarstall,	Tithe free.
Bradenham,	Tithable.
Bradwell,	Ditto.
Brayfield, Cold,	Tithe free.
Brickhill, Great,	Ditto ditto.
Brickhill, Little,	Ditto ditto.

Brickhill,

Brickhill, Bow,	Tithe free.
Brill,	Part tithable and part tithe free.
Broughton,	Tithe free.
Buckingham,	Half tithable and half tithe free.
Buckland,	Part tithable and part tithe free.
Burnham,	Part tithable and part tithe free.
Calverton,	Tithe free.
Castlethorpe,	Ditto ditto.
Chalfont St. Giles,	Tithable.
Chalfont St. Peter's,	Ditto.
Cheddington,	Ditto.
Chersley,	Ditto.
Chesham Bois,	Ditto.
Chesham,	Part tithable and part tithe free.
Cheynies,	Tithable.
Chickley,	Ditto, the most part tithe free.
Chilton,	Tithe free.
Chilton, with Easington, ..	Ditto ditto.
Claydon, East,	Ditto ditto.
Claydon, Middle,	Ditto ditto.
Claydon, Steeple,	Tithe corn rent.
Clifton,	Tithable in the fields, enclosure tithe free.
Crawley, North,	Tithe free.
Crendon, Long,	Tithable, except Mr. Reynold's estate.
Cubbington,	Tithe free.
Cuddington,	Tithable.
Dagnal,	Ditto.
Datchet,	Part tithable and part tithe free.
Denham,	Tithable.
Dorney,	Ditto.
Dorton,	Ditto to Christ Church, Oxford.
Drayton,	Part tithable and part modus.

Drayton Parslow,	Tithe free.
Dunton,	Ditto ditto.
Dynton,	Ditto ditto.
Edlesborough,	Tithable.
Edgcot,	Tithe free.
Ellesborough,	Ditto ditto.
Emberton,	Ditto ditto.
Eton,	Tithable.
Farnham,	Ditto.
Fascott,	Ditto.
Fawley,	Ditto.
Fingest,	Ditto.
Fulmer,	Ditto.
Gaddesden, Little,	Ditto.
Gayhurst,	Tithe free.
Gibbon, Marsh,	Tithable.
Granboro',	Ditto.
Grove,	Tithe free.
Grendon Underwood, ..	Tithe free, except a small part of Mr. Hearn's farm, 32 acres tithable.
Haddenham,	Tithable.
Halton,	Ditto.
Hambleton,	Ditto.
Hampden, Great,	Ditto.
Hampden, Little,	Part tithable and part tithe free.
Hanslope,	Tithe free.
Harmead,	Tithable.
Hardwick,	Tithe free.
Hardwick with Weedon, ..	Ditto ditto.
Hartwell,	Ditto ditto.
Harwood, Great,	Greatest part tithable.
Harwood, Little,	Tithe free, except a petty tithe.
Haversham,	Tithe free.

Hedgerley,

Hedgerley,	Tithable.
Hedsor,	Ditto.
Hillesden,	Tithe free.
Hitcham,	Ditto ditto.
Hitchingdon,	Ditto ditto.
Hogston,	Tithable.
Horsingdon,	Ditto.
Horton,	Tithe free.
Hulcot,	Ditto ditto.
Ickford,	Tithable.
Ilmer,	Tithe free.
Iver,	Part tithable and part tithe free.
Ivinghoe,	Tithable.
Kimble Magna,	Tithe free except Easter dues.
Kimble Parva,	Tithe free.
Kingsey,	Tithable.
Kreslow,	Tithe free.
Langley,	Tithable.
Lathbury,	Ditto.
Leekhamstead,	Ditto.
Lee,	Tithe free.
Lillingstone,	Tithable.
Linford, Great,	Ditto.
Linford, Little,	Tithe free.
Linslade,	Ditto ditto.
Loughton,	Ditto ditto.
Ludgershall,	Ditto ditto.
Marlow, Great,	Ditto ditto.
Marlow, Little,	Ditto ditto.
Marston, Fleet,	Part tithable and part tithe free.
Marston, North,	Tithable.
Mearsworth,	Ditto.
Medmenham,	Tithe free.
Montmore,	Ditto ditto except a small tithe.
Milton,	

Milton,	Tithable.
Missenden, Great,	Ditto.
Missenden, Little,	Tithe free, except a small part that pays 60 <i>l.</i> per year.
Morton, Maids,	Tithe free.
Moulsoe,	Ditto ditto.
Mursley, with Salden, ..	Tithable.
Nash, with Whaddon, ..	Ditto.
Newport Pagnel, with Caldicott,	} Part tithable and part tithe free.
Newton Blossomville, ..	
Newton Longville,	Ditto, except 40 acres.
Northall, a hamlet to Edlesborough,	} Tithable.
Oakley,	
Olney,	Tithable.
Owing,	Ditto.
Padbury,	Tithe free.
Penn,	Greatest part tithe free.
Pitchcot,	Tithable, except Paul Well's, Esq. estate tithe free.
Pittlesthorpe,	Tithable.
Preston, with Cowley, ..	Preston tithe free, Cowley tithable.
Quainton, with its hamlets,	Tithable.
Quarrendon,	Tithe free.
Radnage,	Tithable.
Ratley, with Chackmore,	Ditto.
Ravenstone,	Tithe free.
Risborough, Princes,	Tithable.
Risborough, Monks,	Ditto.
Saunderton,	Ditto.
Shabbington,	Ditto.

Shalstone,

Shalstone,	Tithe free.
Shenley,	Tithable.
Sherrington,	Tithe corn &c. t.
Slapton, with Horton, ..	Tithable.
Snelson, with Lavenden, ..	Tithe free.
Soulbury,	Ditto ditto.
Stewkley,	Tithable.
Stoke,	Ditto.
Stoke Goldington,	Tithe free.
Stoke Hammond,	Ditto ditto.
Stoke Mandeville,	Ditto ditto, except one farm pays a corn tithe.
Stone, with Bishopstone, ..	Tithe free.
Stowe,	Ditto ditto, except a vicarage tithe.
Stratford, Water,	Tithable.
Stratford, Stony,	Tithe free.
Stratford, Fenny,	Ditto ditto.
Swanbourn,	Ditto ditto, except a privy tithe.
Sympson,	Tithe free.
Taplow,	Ditto ditto.
Tattenhoe,	Ditto ditto.
Thornborough,	Ditto ditto.
Thornton,	Tithable.
Tingewick,	Tithe free.
Towersey,	Ditto ditto, greatest part.
Tarfield,	Tithe free.
Turvill, Weston,	Part tithable and part tithe free.
Turweston,	Tithable.
Twyford, with Poundon } and Charndon, }	Tithe free.
Tyringham, with Filgrave, ..	Ditto ditto.
Upton cum Chalvey, ..	Part tithable and part tithe free.
Weston Underwood,	Tithable, except Mr. Wood's es- tate tithe free.

Waddesdon,

Waddesdon, with its hamlets,	} Tithe free.
Walton,	Modus tithe.
Wavendon,	Tithable.
Westbury,	Tithe free.
Wendover,	Ditto ditto.
Wexham,	Tithable.
Whaddon,	Part tithable and part modus.
Whitchurch,	Tithable.
Winchendon, Lower, ..	Tithe free.
Winchendon, Under, ..	Ditto ditto.
Willen,	Ditto ditto
Wing,	Ditto ditto.
Wingrave,	Ditto ditto.
Winslow, with Shipton, ..	Ditto ditto.
Woburn,	Ditto ditto.
Woolston, Great,	Tithable.
Woolston, Little,	Ditto, except 20 acres.
Woolverton,	A trial in dispute for the small tithes.
Worminghall,	Tithe free.
Wooton,	Ditto ditto.
Wroughton,	Ditto ditto.
Wraysbury,	Tithable.
Wycombe, High,	Tithe free.
Wycombe, West,	Part tithable and part tithe free.

No. VI.

POOR-RATES.

<i>Parishes.</i>	<i>Poor-rates per Pound.</i>		<i>Parishes.</i>	<i>Poor-rates per Pound.</i>	
	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
Addington,	7	0½	Broughton,	2	0
Adstock,	11	0	Buckingham, with the	7	0
Akeley,	5	6	borough of Bourton,		
Aldbury,	5	0	&c.		
Amersham,	5	0	Ruckland,	6	0
Ashendon, with Pollicot,	3	0	Burnham,	1	6
Ashton Sanford, ..	2	6	Calverton,	3	0
Aston Abbots,	2	0	Castlethorpe,	4	0
Aston Clinton, with St. }	5	0	Chalfont St. Giles, ..	5	0
Leonard's,			Chalfont St. Peter's, ..	4	0
Astwood,	4	6	Cheddington,	6	0
Aylesbury, with Walton,	6	0	Chersley,	2	6
Barton, with Chitwood,	2	0	Chesham Bois,	7	0
Beaconsfield,	6	0	Chesham,	5	6
Benchampton,	2	6	Cheynies,	7	0
Bearton, with Broughton,	4	0	Chickley,	3	0
Biddlesden,	3	0	Chilton,	5	0
Bledlow,	9	0	Chilton, with Easington,	4	0
Bletchley, with Water }	8	0	Claydon, East,	4	6
Eaton,			Claydon, Middle,	1	6
Boarstall,	2	6	Claydon, Steeple,	6	0
Bradenham,	6	0	Clifton,	5	0
Bradwell,	4	6	Crawley, North,	3	0
Brayfield Cold,	2	0	Crendon, Long,	6	0
Brickhill, Great,	3	0	Cublington,	2	0
Brickhill, Little,	4	6	Cuddington,	3	6
Brickhill, Bow,	4	6	Dagnall,	5	6
Brill, with Little London,	4	0	Datchet,	7	0
			Denham,		

<i>Parishes.</i>	<i>Par-value per Poor.</i>		<i>Parishes.</i>	<i>Par-value per Poor.</i>	
	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
Deubam,	5	0	Harmend,	2	6
Dorney,	6	0	Hardwick,	3	0
Dorton,	4	0	Hardwick, with Weedon,	3	0
Drayton,	4	6	Hartwell,	4	6
Drayton Parslow,	5	0	Harwood, Great,	7	0
Dunton,	2	6	Harwood, Little,	9	0
Dynton, with Upton, Mor-			Haversham,	3	0
ton, Aston, Waldridge }	4	6	Hedgerley,	2	6
Ford,			Hedsor,	5	0
Edlesborough,	5	0	Hillesden, with Cowley,	2	6
Edgrot,	4	0	Hitcham,	5	3
Edlesborough,	5	0	Hitchingden,	6	0
Emberton,	3	6	Hogston,	3	0
Eton,	5	0	Horsington,	4	0
Farnham, with Salthill,			Horton,	6	0
Hodgley Dean, Sear }	1	0	Hulcot,	3	0
Green,			Ickford,	6	0
Fascott,	3	6	Ilmer,	4	0
Fawley,	4	6	Iver,	4	6
Fingest,	10	9	Ivinghoe,	3	0
Fulmer,	3	0	Kimble Magna,	6	0
Gaddeuden, Little, ..	5	0	Kimble Parva,	4	0
Gayhurst, with Gare- }	2	0	Kingsey,	3	0
fields,			Kreslow,	6	0
Gibbon, Marsh,	5	0	Langley,	5	0
Grimbors,	4	6	Lathbury,	2	0
Grendon Under-			Leckhamstead,	5	0
wood, with Great }	3	0	Lee,	12	6
Moor,			Lillingstone, with }	2	0
Grove,	4	0	Dayrell,		
Haddenham,	5	0	Linsford, Great,	4	0
Halton,	5	0	Linsford, Little,	2	6
Hambleton,	5	0	Linslade,	3	0
Hampden, Great, ..	11	0	Lougham,	4	6
Hampden, Little, ..	15	0	Ludgershall, with }	3	0
Hanslope,	5	0	Kingswood, }		

Marlow,

<i>Parishes.</i>	<i>Pear-water per Pound.</i>		<i>Parishes.</i>	<i>Pear-water per Pound.</i>	
	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
Marlow, Great,	6	0	Risborough, Monks, . .	6	6
Marlow, Little,	6	0	Stamerton,	10	0
Marston, Fleet, }	3	0	Shabbington,	3	0
Marston, North,	6	0	Shalstone,	5	0
Mearsworth,	5	6	Shenley,	3	0
Medmenham,	5	0	Sherrington,	4	0
Mentmore, with Lyburn,	5	6	Slapton, with Merton,	4	0
Milton,	5	6	Snickon, with Lavenden,	5	0
Missenden, Great, . .	7	0	Soulbury, hamlets Hol-	} 3	6
Missenden, Little, . . .	10	0	lughden and Druggen-		
Morton, Marks,	3	6	ham,		
Moulsoe,	3	6	Stewkley,	3	0
Mursley, with Salden,	7	0	Stoke,	5	0
Nash, with Whaddon,	5	0	Stoke Goldington, }	3	0
Newport Pagnel, with }	3	6	with Barkley-lane, }		
Caldicot, }			Stoke Hammond, . . .	3	0
Newton Blossomville,	4	6	Stoke Mandeville, . . .	5	0
Newton Longville, . .	5	0	Stone, with Bishopstone,	5	0
Northall, a hamlet to }	5	0	Stowe,	4	0
Edlesborough, . . }			Stratford, Fenny, . . .	5	0
Oakley,	4	0	Stratford, Stony, . . .	10	0
Olney,	4	6	Stratford, Water, . . .	2	0
Owing,	8	0	Swanbourn,	7	0
Padbury,	7	0	Sympson,	4	6
Penn,	5	6	Taplow,	6	0
Pitchcott,	4	0	Tattenhoe,	5	0
Pittlesthorpe,	4	0	Thornborough,	6	0
Preston, with Cowley,	5	0	Thornton,	2	0
Quinton, with Dodden-	3	0	Tingewick,	7	0
shall, Shipton Lee, and }			Towersey,	7	0
Denham, }			Turfield,	8	6
Quarrendon,	1	3	Turville, Weston, . . .	5	0
Radnage,	9	0	Turweston,	5	0
Ratley, with Chackmore,	4	6	Twyford, with Poundou }	5	0
Ravenstone,	3	0	and Charndon, . . . }		
Risborough, Princes, .	10	0	Tyringham, with Filgrave,	2	8

Under-

<i>Parishes.</i>	<i>Poor-rates per Pound.</i>		<i>Parishes.</i>	<i>Poor-rates per Pound.</i>	
	<i>s.</i>	<i>d.</i>		<i>s.</i>	<i>d.</i>
Underwood, Weston, ..	3	0	Wing,	3	0
Upton cum Chalvey, ..	5	0	Wingrave,	4	0
Waddesdon, hamlets	5	6	Winslow, with Slupton,	7	0
Westcot, Cranwell,			Woburn,	6	0
Woods, Ham, and			Woolston, Great,	3	0
Coneyhill,			Woolston, Little,	2	6
Walton,	2	0	Woolverton,	6	0
Wavendon,	5	6	Wormenhall,	3	0
Wendover,	5	0	Wooton,	2	6
Westbury,	9	0	Wroughton,	3	6
Wexham,	7	6	Wraysbury,	7	0
Whaddon,	5	0	Wycombe, High,	6	0
Whitchurch,	10	0	Wycombe, West,	6	0
Winchendon, Lower,	3	0			
Winchendon, Under,	5	0			
Willen,	2	0			
			Total,	£.50	12 11½

The average of the poor-rates through the county, is 4s. 11½d. in the pound.

A great increase in the parish rates of the last seven years—some parts nearly double.

A Calculation of Corn ham; the Rotation, Summer Fallow,

Corn Crops.						
Summer Fallow, Fi						
	£.	s.	d.	£.	s.	d.
To three ploughings, at 15s.....	0	0	0	0	0	0
To rent,						
To Assessments,						
Wheat, Second						
To ploughing,er bushel, ..	13	19	6			
To seed, three bushels, at 1s.....	3	0	0			
To harrowing,				16	19	6
To weeding,						
To rolling,						
To harvesting,						
To thrashing,						
To rent,						
To assessments,						
Beans, Third						
To ploughing, bushel,	7	7	4			
To seed, three bushels, at 5s.....	3	0	0			
To harrowing,				10	7	4
To hoeing,						
To harvesting,						
To thrashing,						
To rent,						
To assessments,						
Summer Fallow, For						
To expense in this process, the.....	0	0	0	0	0	0



A Calculation of Cham, on rich Clay Loam Land, similar.

Corn Crop						
Wheat, 1						
	£.	s.	d.	£.	s.	d.
To one ploughing, per bushel, ..	19	7	0			
To seed three bushels,	3	0	0			
To harrowing,				22	7	0
To weeding,						
To rolling,						
To harvesting,						
To thrashing,						
To rent,						
To assessments,						
Beans, 2						
To one ploughing, r bushel,	13	12	0			
To seed three bushels,	3	0	0			
To harrowing,				16	12	0
To hoeing,						
To harvesting,						
To thrashing,						
To rent,						
To assessments,						
Barley, 1						
To two ploughings, ushel,	14	8	0			
To seed four bushels,	2	0	0			
To harrowing,				16	8	0
To clover-seed,						
To weeding,						
To harvesting,						
To thrashing,						



[At page 400.

A Statement of preceding, for

Corn

	£.	s.	d.
To paring and burning 50 arer.	1000	0	0
Ploughing three times be - -	600	0	0
acre each time, - - -	100	0	0
Harvesting, at 12s. per ac			
Threshing 250 quarters of			
Rent, - - -			

£. 4081 5 0

Expenses on 50 acres of or,	1000	0	0
Ditto on 50 acres of whe - -	900	0	0
Ditto on 50 acres of bea - -	150	0	0
Ditto on 50 acres of harl - -	625	0	0
Ditto on 50 acres of peas - -	100	0	0
Ditto on 50 acres of whe - -	481	5	0
- - -	125	0	0
- - -	600	0	0
- - -	100	0	0
- - -	900	0	0
- - -	150	0	0
	£. 5131	5	0

Note.—From the hich is six times 25*l.*, or 150*l.*; and thus the profit

I have been thinking of you
 and wondering how you are
 getting on. I hope you are
 well and happy. I have been
 very busy lately, but I have
 managed to find some time
 to write you. I have been
 thinking of you very much.

No. X.

ENCLOSING.

Parishes Enclosed in Buckinghamshire.

<i>Parishes.</i>	<i>Date of Enclosure.</i>	<i>No. of Acres Enclosed.</i>	<i>Effects of Enclosing.</i>
Akeley cum Stockholt,	1794	485	Both corn and grass decreased; but with favourable seasons some improvement may be expected.
Aston Abbots,	1793	640	Corn increased about one-fifth.
Aylesbury,	1771	1740	Wheat decreased about half; sheep decreased about half; milk cows about as many more; horses decreased.
Brickhill, Bow,	1790	1741	Barley decreased about three-fourths; beans decreased seven-tenths; oats increased three fourths.
Brickhill, Great, &c.	1771	1200	Butter increased twelve to one; pork six to one; sheep six to one; cattle considerably increased.
Bearton and Hulcot,	1779	2343	Butter and flesh increased treble; grain decreased one half; in Hulcot, grain decreased one-third.
Castlethorpe,	1793	590	Cattle and sheep increased; grain decreased.
Cubbington,	1769	750	Sheep decreased, but of a better sort; cows increased; barley decreased one-third; wheat, beans, and pease, produce the same as before the enclosure.
BUCKS.]		D d	Emberton,

<i>Parishes.</i>	<i>Date of Enclosure.</i>	<i>No. of Acres Enclosed.</i>	<i>Effects of Enclosing.</i>
Emberton,	1798	1216	Stock of all kinds decreased ; wheat diminished.
Granborough,	1796	1325	Breeding of stock decreased ; feeding stock increased ; decreased in the number of acres sown with grain.
Grendon Underwood,	1769	1950	Sheep increased three times as many ; and one-third more butter ; wheat de- creased one half ; oats in- creased ten to one ; beans decreased one half.
Hardwick,	1778	1200	Sheep decreased one-third, but of a much better sort ; cows increased double ; grain not decreased, on ac- count of better cultivation.
Hartwell and Stone,	1776	1740	Meat and butter considerably increased ; wheat diminish- ed four bushels per acre.
Hanslope,	1778	1721	Breeding cattle decreased ; Feeding cattle increased ; pigs and poultry decreased ; wheat decreased one-fourth.
Hitcham,	1778	557	Cattle increased about two- thirds ; wheat increased one-sixth ; Lent corn in- creased one-sixth.
Harwood, Little, ..	1766	960	Cows increased one-third ; pigs increased one-third ; horses and sheep decreased ; wheat diminished one-third.
Loughton,	1768	1094	Wheat decreased ; barley and beans decreased ; oats in- creased.
Marston, North, ..	1778	1776	Breeding stock decreased ; feeding stock increased ; wheat decreased.
Newton Longville, ..	1770	1700	
Newport Pagnel, ..	1794	935	Wheat and stock increased.

Olney.

<i>Parishes.</i>	<i>Date of Enclosure.</i>	<i>No. of Acres Enclosed.</i>	<i>Effects of Enclosing.</i>
Olney,	1767	1800	Sheep decreased half, but of a better sort; cows and oxen decreased, but much larger, which makes up the deficiency for beef and butter; wheat increased; barley and beans computed the same as before the enclosure.
Padbury,	1795	1800	Butter and pork increased; all other stock and grain decreased.
Drayton Parslow, ..	1797	1586	Grain decreased.
Preston Bisset,	1781	900	Cows, sheep, and hogs, increased double; grain decreased.
Shalstone,	1767	322	Flesh and butter increased one-third.
Singleborough,	1799	832	Sheep decreased.
Sherrington,	1796	1600	Produce nearly the same as before.
Soulbury,	1772	2000	Flesh and butter increased; grain decreased one-fourth.
Steeple Claydon,	1795	2300	Beef and butter increased; grain decreased.
Stoke Goldington, ..	1770	780	Cows increased one-third; sheep increased five to six; hogs decreased one half; grain decreased one-third.
Stoke Hammond, ..	1774	1374	Beef and butter increased; sheep increased considerably; grain decreased.
Stoke Mandeville, ..	1791	1080	Sheep and pigs decreased; wheat, barley, and beans, decreased one-third.
Tingewick, with Chackmore,	1773	1545 586	} Stock and grain diminished one half.
Thornborough,	1797	2080	
			Sheep decreased; and grain about the same as before the enclosure.
Swanbourn,	1762	2000	Cows, butter, and pigs, increased; sheep diminished; wheat decreased.

<i>Parishes.</i>	<i>Date of Enclosure.</i>	<i>No. of Acres Enclosed.</i>	<i>Effects of Enclosing.</i>
Waddesdon,	1774	1300	} Sheep, cattle, and grain decreased.
Westcott,	1765	1100	
Wendover,	1794	2208	Cattle and grain increased.
Wing,	1797	3586	Cattle and pigs increased; sheep decreased.
Wingrave,	1797	2297	Sheep decreased, and cattle increased: wheat, barley, and beans, increased.
Walton,	1799	1100	Wheat decreased.
Weston,	1798	1300	Sheep decreased; grain increased.
Westbury,	1764	1507	Cows, butter, and hogs, increased.
Winslow,	1766	1163	Cows, butter, and fat hogs, increased; sheep decreased; grain of all kind decreased.
Whitchurch,	1761	1470	Cows the same in number as before the enclosure; all other stock decreased half; grain decreased half.
Woolston, Great, ..	1796	293	Every article has increased.
Woolston, Little, ..	1791	567	Stock decreased; wheat decreased half.
Wroughton on the green,	1768	1100	Stock increased; grain decreased.
Wraysbury,	1799	860	An expected increase.

No. XI.

Account of the Seed sown per Acre, and Produce of Crops cultivated.

Parishes.	Seed per Acre.					Produce per Acre			
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Oats, bush.
Addington, three ploughings for wheat, four for barley, and one for beans. A swing-plough, four horses and a driver. Manure, fold dung	2½	4	3	—	—	20	30	20	—
Adstock, ploughing process the same as above. Manure, fold dung; sheep-folding for wheat, and ashes for clover	3	6	4	—	—	20	24	24	—
Akeley, ploughing the same as above. Manure, fold dung, sheep-folding, and lime	2½	4½	4½	—	5	32	52	24	64
Aldbury, ploughing the same as above. Manure, fold dung and sheep-folding	2½	—	4	3	—	18	—	18	16
Amersham, ploughing the same as above. Manure, fold dung, sheep-folding, ashes, and set for clover	2½	4	4	4	4	20	10	24	24
Ashendon, with Pollicot, ploughing the same as above. Manure, fold dung, sheep-folding. Beans and peas dibbled	2	4½	3½	3½	—	28	32	20	20
Aston Sanford, ploughing the same as above. Manure, fold dung and sheep-folding; ashes for clover	2	4	4	—	4	24	32	30	32
Aston Abbots, ploughing the same as above. Manure, fold dung and sheep-folding	2½	4	4	—	—	20	36	30	—
Aston Clinton, with St. Leonard's, ploughing the same as above. Manure, fold dung and sheep-folding	2½	3	4	—	4	30	24	24	8
Astwood, ploughing the same as above	2½	4	4	—	5	18	15	24	24

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Ayles-

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.
Aylesbury, with Walton, culture the same as before. Beans set three bushels	2 $\frac{1}{2}$	4	4	3	—	30	40	36	30	—
Barton, with Chitwood,	2	2 $\frac{1}{2}$	3	—	3	20	28	20	—	28
Beaconsfield, culture as before	3	4	—	—	4	16	24	—	—	28
Beauchampton, culture as before	2 $\frac{1}{2}$	4 $\frac{1}{2}$	—	—	—	20	—	20	—	—
Biddlesden, culture as before ..	2 $\frac{1}{2}$	4	4	—	4	18	30	20	—	30
Bearton, with Broughton, culture as before	2 $\frac{1}{2}$	4	4	—	5	22	36	22	—	36
Bledlow, culture as before	2	4	4	—	4	20	24	24	—	28
Bletchley, with Water Eaton, culture as before	2 $\frac{1}{2}$	4	4	—	5	16	24	16	—	16
Boarstall, culture as before	2 $\frac{1}{2}$	—	3	—	4	16	—	18	—	22
Bradenham, culture as before ..	3	4	—	4	4	20	32	—	16	16
Bradwell, culture as before	2 $\frac{1}{2}$	4	5	—	4	18	30	20	—	32
Brayfield, Cold, culture as before ..	3	4	—	—	7	25	40	—	—	32
Brickhill, Great, culture as before ..	3	5	5	3	5	22	36	20	24	40
Brickhill, Little, culture as before ..	3	5	5	3	5	22	36	20	24	40
Brickhill, Bow, culture, the Sussex plough and swing-plough, and four horses ..	2 $\frac{1}{2}$	4	—	—	—	12	30	—	—	—
Brill, with Little London, culture, the swing-plough, four horses, and a driver	2 $\frac{1}{2}$	—	3	—	4	20	—	20	—	36
Broughton, culture as before ..	2	5	4	—	5	20	32	20	—	32
Buckingham, culture as before ..	2 $\frac{1}{2}$	4	3 $\frac{1}{2}$	—	4	20	32	24	—	40
Buckland, culture as before	2	3	4	—	3	14	24	20	—	16
Burnham, culture as before	3	4	3	—	3 $\frac{1}{2}$	28	40	28	—	40
Calverton, culture as before	2 $\frac{1}{2}$	4	4 $\frac{1}{2}$	—	5	20	32	20	—	32
Castlethorpe, culture as before ..	2 $\frac{1}{2}$	4 $\frac{1}{2}$	5	—	5	24	32	32	—	30
Chalfont St. Giles, culture as before	3	4	—	5	4	20	30	—	30	32
Chalfont St. Peter's, culture as before. Mr. Hatch sows buckwheat, one bushel of seed, and produce 24 bushels	3	3 $\frac{1}{2}$	—	4	3 $\frac{1}{2}$	14	28	—	20	28
Cheddington, culture as before ..	2 $\frac{1}{2}$	4	4	3 $\frac{1}{2}$	—	18	28	16	24	—
Chersley, culture as before	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	24	32	18	24	36
Chesham Bois, culture as before ..	3	4	—	4	4	20	30	—	20	32
Chesham, culture as before	2 $\frac{1}{2}$	3 $\frac{1}{2}$	—	4	4 $\frac{1}{2}$	17	28	—	18	28
Cheynies, culture as before	3	4	—	4	4	20	30	—	20	32
Chickley, culture as before	2 $\frac{1}{2}$	4	5	—	5	22	32	20	—	32
Chilton, culture as before	2 $\frac{1}{2}$	4	4 $\frac{1}{2}$	4 $\frac{1}{2}$	5	24	32	26	32	36

Chilton,

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.
Chilton, with Easington, culture as before	21	3 $\frac{1}{2}$	3	—	4	24	32	18	—	36
Claydon, East, culture as before ..	21	4	3	—	4	20	26	20	—	36
Claydon, Middle, culture as before	21	4	3	—	4	20	26	20	—	36
Claydon, Steeple, culture as before	21	3	4	—	4	20	26	20	—	36
Clifton, culture as before	2	4	4	—	4	20	32	16	—	24
Crawley, North, culture as before ..	21	5	4	—	4	20	32	20	—	20
Crendon, Long, culture as before ..	21	3 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	24	32	18	24	36
Cubbington, culture as before	21	4	3 $\frac{1}{2}$	—	—	20	32	20	—	—
Cuddington, culture as before	21	5	5	5	—	20	28	16	32	—
Dagnal, culture as before	3	4	—	—	—	18	30	—	—	—
Datchet, culture as before	21	4	3 $\frac{1}{2}$	—	5	20	28	24	—	—
Denham, culture as before	3	4	4	5	5	26	40	24	24	40
Dorney, culture as before	21	4 $\frac{1}{2}$	3 $\frac{1}{2}$	5	5	20	37	24	16	40
Dorton, culture as before	21	3 $\frac{1}{2}$	3	—	4	24	32	18	—	36
Drayton, culture as before	21	4	5	—	4	20	24	17	—	24
Drayton Parslow, culture as before ..	3	6	6	—	5	20	12	20	—	32
Dunton, culture as before	21	4	4	—	—	22	30	20	—	—
Dynton, with its hamlets, culture as before	21	4	3	5	4	24	12	20	24	32
Ellesborough, culture as before ..	21	4	4	—	—	11	30	20	—	—
Edgcot, culture as before	21	4	4	—	5 $\frac{1}{2}$	21	20	20	—	16
Ellesborough, culture as before ..	21	4	4	5	—	21	12	24	24	—
Emberton, culture as before	21	4	4	—	5	21	10	20	—	32
Eton, culture as before	3	4 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	21	36	28	24	40
Farnham, with its hamlets, culture as before	3	4	3	—	5	21	36	50	—	40
Fawley, culture as before, except Mr. Layton Cooke, who uses scarifier and drill	3	4	—	4	4	20	26	—	24	26
Fingest, culture, four horses and a driver	3	4	—	4	4	20	26	—	24	36
Fiscott, culture as before	21	4 $\frac{1}{2}$	4 $\frac{1}{2}$	—	5	32	52	40	—	64
Fulmer, culture as before	3	4	—	3	4	20	40	—	20	40
Gaddesden, Little, culture, some use three and four horses	21	4	—	—	—	20	32	—	—	—
Gayhurst, culture, four horses and a driver	—	4	4	—	4	—	40	32	—	40
Gibbon, Marsh, culture as before ..	21	4	6	—	5	20	24	20	—	24
Granboro', culture as before	3	6	6	—	5 $\frac{1}{2}$	12	12	10	—	16

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Grendon

Parishes.	Seed per Acre.					Produce per Acre.			
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.
Grendon Underwood, with Great Moor, culture as before	2 $\frac{1}{2}$	4	4	—	4	24	20	24	—
Grove, culture as before	2 $\frac{1}{2}$	—	4	—	—	20	—	20	—
Haddenham	2 $\frac{1}{2}$	5 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	24	32	18	24
Halton, culture as before	2 $\frac{1}{2}$	4	4	4	5	32	40	32	24
Hambledon, culture as before	4 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	6	24	32	32	32
Hampden, Great, culture as before, except sometimes six horses in a plough	2	4	—	4	4	16	16	—	16
Hampden, Little, culture, four horses and a driver	3	4	—	4	4	12	18	—	18
Hanslope, culture as before	2 $\frac{1}{2}$	5	4	—	—	25	32	50	—
Harmend, culture as before	2 $\frac{1}{2}$	4	3	—	4	20	28	18	—
Hardwick, culture as before	2 $\frac{1}{2}$	4	4	—	—	22	32	20	—
Hardwick, with Weedon, culture as before	3	5	4	—	—	20	24	24	—
Hartwell, culture as before	2	4 $\frac{1}{2}$	3	3 $\frac{1}{2}$	—	28	32	20	24
Harwood, Great, culture as before	3	5	5	—	—	18	28	20	—
Harwood, Little, culture as before	2 $\frac{1}{2}$	5	5	—	5	18	24	16	—
Haversham, culture as before	2 $\frac{1}{2}$	4	4	—	—	22	34	20	—
Hedgerley, culture as before	3	3 $\frac{1}{2}$	—	5	5	16	16	—	16
Hedsor, culture as before	3	4	—	—	4	16	36	—	40
Hillesden, with Cowley, culture as before	2 $\frac{1}{2}$	4	6	—	5	20	24	20	—
Hitcham, culture as before	2 $\frac{1}{2}$	4	—	—	4 $\frac{1}{2}$	24	36	—	40
Hitchingdon, culture as before	2 $\frac{1}{2}$	4	—	—	4 $\frac{1}{2}$	20	32	—	40
Hogston, culture as before	2	—	4 $\frac{1}{2}$	—	—	20	—	24	—
Horsingdon, culture as before	2	3 $\frac{1}{2}$	4	—	4	24	24	24	—
Horton, culture as before	2 $\frac{1}{2}$	4	4	—	5	32	44	32	—
Drill culture carried on in this parish by Mr. McKay	2	2 $\frac{1}{2}$	2	—	—	—	—	—	—
Hulcot, culture, four horses and a driver	2 $\frac{1}{2}$	4	4	—	5	22	36	22	—
Ickford, culture as before	2	4	4	—	6	20	20	32	—
Ilmer, culture as before	2	4	3	—	4	24	32	30	—
Iver, culture as before	3	4	4	3 $\frac{1}{2}$	—	24	32	24	—
Ivinghoe, culture as before	2 $\frac{1}{2}$	—	4	—	—	18	—	18	—
Knabe Magna, culture as before ..	2 $\frac{1}{2}$	4	4	—	—	32	32	30	—
Kimble Parva, culture as before ..	2	4	4	—	—	16	24	24	—
Kingsey, culture as before	2	4	4	—	—	20	30	20	—
Kreslow, culture, seldom more than one ploughing for a crop in this parish	3	5	4	4	—	36	48	40	—

Langley,

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Chaff, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.
Langley, culture, one farmer uses two horses to a Norfolk plough, and no driver; the rest of the parish use four horses and a driver to a wheel-plough	3	5½	3½	4½	5½	28	30	48	48	40
Lathbury, culture, four horses and a driver	2½	4	4	—	—	25	40	20	—	—
Leekhamstead, culture as before ..	2½	4½	4½	—	5	32	52	24	—	64
Lee, culture as before	3	4	—	—	4	16	28	—	—	16
Lillingstone, with Dayrell, culture as before	2½	4½	4½	—	5	20	30	30	—	40
Linford, Great, culture as before ..	2½	4	4	—	—	22	34	20	—	—
Linford, Little, culture as before ..	2½	4	5	—	—	20	30	20	—	—
Linslade, culture as before	2½	4	4	—	4	25	32	24	—	40
Loughton, culture as before	2½	4	5	—	4	18	30	20	—	32
Ludgershall, with Kingswood, culture as before	2½	—	3	—	4	16	—	18	—	22
Marlow, Great, culture as before ..	2½	4	4½	—	4½	20	32	20	—	40
Marlow, Little, culture as before ..	2½	4	4	—	5	16	24	16	—	16
Marston, Fleet, culture as before ..	3	4½	5½	—	4½	24	18	24	—	32
Marston, North, culture as before ..	2½	4	5	—	4	22	32	24	—	48
Mearsworth, culture as before	2½	4	4	—	—	22	32	22	—	—
Medmenham, culture as before ..	2½	4	—	5	4½	24	32	—	48	46
Mentmore, with Lyburn, culture as before	2½	—	4	—	—	20	—	20	—	—
Missenden, Great, culture as before. Mr. L. Lovell grows buck-wheat, potatoes, and cabbages ..	3	4	—	—	4	24	32	—	—	37
Missenden, Little, culture as before ..	2½	4	—	4	4	24	32	—	24	40
Milton, culture as before	2½	4	5	—	—	24	32	20	—	—
Morton, Maids, culture as before ..	2½	4	4½	—	4	20	24	30	—	24
Moulsoe, culture as before	3	5	4	—	4	20	32	20	—	32
Mursley, with Salden, culture as before	3	5	5	—	6	20	24	24	—	24
Nash, with Whaddon, culture as before	2½	4	5½	—	—	18	22	22	—	—
Newport Pagnel, with Caldicot, culture as before	2½	3½	3½	—	—	25	40	20	—	—
Newton Blossomville, culture as before	2½	4	4	—	4	20	32	24	—	24
Newton Longville, culture as before ..	3	6	6	—	6	20	32	20	—	30
Northall, hamlet to Edlesborough, culture as before	2½	4	4	—	—	20	32	20	—	—

Oakley,

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.
Oakley, culture as before	2 $\frac{1}{2}$	3	4	—	4	24	32	32	—	36
Olney, culture as before	2	4	4	—	4	23	24	20	—	24
Owing, culture as before	2 $\frac{1}{2}$	—	3	—	4	16	—	18	—	22
Padbury, culture as before	2	4	5	—	5	16	18	12	—	22
Peau, culture as before	2 $\frac{1}{2}$	4	—	4	4	24	40	—	32	43
Pitchcott, culture as before	2 $\frac{1}{2}$	—	3	—	4	16	—	16	—	32
Pittlesthorpe	2 $\frac{1}{2}$	4	5	—	5	24	32	32	—	30
Preston, with Cowley, culture as before	2	4	4	—	4	20	16	30	—	30
Quinton, with its hamlets, culture as before	2 $\frac{1}{2}$	4	4	—	4	23	20	24	—	48
Quarrendon, culture as before	2 $\frac{1}{2}$	—	3	—	4	24	—	24	—	40
Radnage, culture as before	3	4	—	—	5	20	23	—	—	28
Ratley, with Chackmore, culture as before	2 $\frac{1}{2}$	3	4 $\frac{1}{2}$	—	4	24	40	32	—	40
Ravenstone, culture as before	2 $\frac{1}{2}$	5	4	—	5	25	32	30	—	32
Risborough, Princes, culture as before	2	4	4	4	4	30	32	30	21	32
Risborough, Monks, culture as before	2	4	4	—	4	20	24	24	—	28
Saunderton, culture as before	2	4	4	4	4	20	24	24	24	28
Shabbington, culture as before	2	3	3 $\frac{1}{2}$	—	3	16	24	12	—	24
Shelstone, culture as before	2	5	4	—	5	20	20	20	—	20
Shenley, culture as before	2 $\frac{1}{2}$	4	4	—	4	18	30	20	—	32
Sherrington, culture as before	2 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	—	4 $\frac{1}{2}$	20	32	20	—	32
Slapton, with Horton, culture as before	2 $\frac{1}{2}$	—	4	—	—	16	—	16	—	—
Snelson, with Lavenden, culture as before	2 $\frac{1}{2}$	4	4	—	5	20	36	20	—	32
Soulbury, with its hamlets, culture as before	2 $\frac{1}{2}$	4	5	—	5	22	36	20	—	40
Stewkley, culture as before	2 $\frac{1}{2}$	—	3	—	—	18	—	16	—	—
Stoke, culture as before	3	4 $\frac{1}{2}$	4	4	5	21	28	24	24	30
Stoke Goldington, culture as before	2 $\frac{1}{2}$	5	5	—	5	16	24	24	—	24
Stoke Hammond, culture as before	3	6	5 $\frac{1}{2}$	—	6	20	32	20	—	32
Stoke Mandeville, culture as before	2 $\frac{1}{2}$	4	5	—	4 $\frac{1}{2}$	20	24	16	—	30
Stone, with Bishopstone, culture as before	2	4 $\frac{1}{2}$	3 $\frac{1}{2}$	—	—	28	32	20	—	—
Stowe, culture as before, except Mr. Parrott, who makes use of Cook's drill, and a double-furrowed plough	2 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{1}{2}$	—	5	26	42	32	—	64

Stratford,

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.
Stratford, Fenny, culture as before	22	4	—	—	4	16	30	—	—	30
Stratford, Water, culture as before	22	5	4	—	4	24	32	24	—	32
Swanbourn, culture as before	22	5	5	—	5	18	24	16	—	24
Sympson, culture as before	22	5	5	—	5	20	32	20	—	32
Taplow, culture as before	22	4	—	—	—	20	32	—	—	—
Tattenhoe, culture as before	22	4½	5½	—	—	18	24	20	—	—
Thorborough, culture as before	22	4½	4	—	5	20	30	20	—	32
Thornton, culture as before	22	—	3	—	—	20	—	20	—	—
Tingewick, culture as before, except one double-furrowed plough, drawn with six horses	24	3	3½	—	4	20	32	20	—	32
Towersey, culture as before	2	3½	3½	—	—	16	24	18	—	—
Turfield, culture as before	3	4	4	4	4½	20	26	24	24	24
Turville, Weston, culture as before	2	4	4	—	5	20	32	28	—	20
Turweston, culture as before	2½	4	4	—	4	18	24	18	—	18
Twyford, with its hamlets, culture as before	2½	4	6	—	5	20	24	20	—	24
Tythingham, with Filgrave, culture as before	2½	4	4	—	4½	30	18	30	—	64
Underwood, Weston, culture as before	2½	4	5	—	—	22	30	18	—	—
Upton cum Chalvey, culture as before	3	3	3	3	4	28	36	28	16	40
Waddesdon, with its hamlets, culture as before	2½	4	4	—	5½	20	32	12	—	40
Walton, culture as before	2½	—	4	—	—	20	—	25	—	—
Wavendon, culture as before. One farmer uses a pair of horses and a Scotch plough	3	4	5	—	5	20	40	25	—	40
Wendover, culture as before	3	4	—	—	4	28	32	—	—	32
Westbury, culture as before	3	4	6	—	—	20	20	20	—	—
Wexham, culture as before	3	3½	3	5	5	20	32	32	20	36
Whaddon, culture as before	2½	4½	5½	—	—	18	24	20	—	—
Whitchurch, culture as before	2½	4	4	—	—	22	36	20	—	—
Winchendon, Lower, culture as before	2½	5	4	4	5	32	40	36	40	42
Winchendon, Under, culture as before	2½	4½	4½	4½	5	22	36	28	24	32
Willen, culture as before	2½	4	4	—	5	30	30	30	—	56
Wing, culture as before	2½	4	5	—	5	20	36	20	—	40
Wingrave, culture as before	2½	4	4	—	—	20	32	20	—	—
Winslow, with Shipton, culture as before	2	4	5	—	5	16	18	12	—	20
Woburn, culture as before	2½	4	4	—	5	16	24	16	—	16

Woolston,

Parishes.	Seed per Acre.					Produce per Acre.				
	Wheat, bush.	Barley, bush.	Beans, bush.	Pease, bush.	Oats, bush.	Wheat, bush.	Barley, bush.	Peas, bush.	Pease, bush.	Oats, bush.
Woolston, Great, cul- ture as before, . . .	2½	4	5	—	4	18	30	20	—	32
Woolston, Little, cul- ture as before, . . .	2½	4	4	—	—	18	30	20	—	—
Woolverton, culture as before, . . .	2	4	4	—	—	22	40	20	—	—
Wormenhall, culture as before, . . .	2½	—	4	—	5	20	—	20	—	32
Wootton, culture as before, . . .	2½	—	5	—	4	30	—	20	—	30
Wroughton, culture as before, . . .	2½	4½	5	—	4½	22	32	32	—	30
Wraybury, culture as before, . . .	2½	4	4	—	—	20	28	24	—	—
Wycombe, High, cul- ture as before, . . .	3	4	—	4	4½	24	32	—	24	41
Wycombe, West, cul- ture as before, . . .	2½	4	4	—	5	20	36	20	—	40
Total	515	77½	74½	18½	67½	4317	5696	3891	1134	4890
Average	25945	409769	41346834	45	21366	3069363	23581592	2412766	324189	

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